पेटेंट कार्यालय
शासकीय जर्नल

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पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

(PROF. (DR) UNNAT P. PANDIT)
CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS

25th April, 2025

CONTENTS

THE PATENT OFFICE
KOLKATA, 25/04/2025
Address of the Patent Offices/Jurisdictions
The following are addresses of all the Patent Offices located at different places having their Territorial Jurisdiction on a Zonal basis as shown below:-

1	Office of the Controller General of Patents, Designs & Trade Marks, Boudhik Sampada Bhavan, Near Antop Hill Post Office,S.M.Road,Antop Hill, Mumbai – 400 037 Phone: (91)(22) 24123311, Fax : (91)(22) 24123322 E-mail: cgpdtm@nic.in	4	The Patent Office, Government of India, Intellectual Property Rights Building, G.S.T. Road, Guindy, Chennai – 600 032. Phone: (91)(44) 2250 2081-84 Fax : (91)(44) 2250 2066 E-mail: chennai-patent@nic.in ❖ The States of Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu and the Union Territories of Puducherry and Lakshadweep.
2	The Patent Office, Government of India, Boudhik Sampada Bhavan, Near Antop Hill Post Office,S.M.Road,Antop Hill, Mumbai – 400 037 Phone: (91)(22) 24137701 Fax: (91)(22) 24130387 E-mail: mumbai-patent@nic.in ❖ The States of Gujarat, Maharashtra, Madhya Pradesh, Goa and Chhattisgarh and the Union Territories of Daman and Diu & Dadra and Nagar Haveli	5	The Patent Office (Head Office), Government of India, Boudhik Sampada Bhavan, CP-2, Sector –V, Salt Lake City, Kolkata- 700 091 Phone: (91)(33) 2367 1943/44/45/46/87 Fax: (91)(33) 2367 1988 E-Mail: kolkata-patent@nic.in ❖ Rest of India
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Website: www.ipindia.nic.in
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All applications, notices, statements or other documents or any fees required by the Patents Act, 1970 and The Patents (Amendment) Act, 2005 or by the Patents (Amendment) Rules, 2006 will be received only at the appropriate offices of the Patent Office.

Fees: The Fees may either be paid in cash or may be sent by Bank Draft or Cheques payable to the Controller of Patents drawn on a scheduled Bank at the place where the appropriate office is situated.

पेटेंट कार्यालय
कोलकाता, दिनांक 25/04/2025
• कार्यालयों के क्षेत्राधिकार के पते

विभिन्न जगहों पर स्थित पेटेंट कार्यालय के पते आंचलिक आधार पर दर्शित उनके प्रादेशिक अधिकार क्षेत्र के साथ नीचे दिए गए है:-

1	कार्यालय : महानियंत्रक, एकस्व, अभिकल्प तथा व्यापार चिहन, एंटोप हिल डाकघर के समीप, एस. एम. रोड, एंटोप हिल, मुम्बई- 400 037, भारत, फोन: (91) (22) 24123311 फ़ैक्स: (91) (22) 24123322 ई. मेल: cgpdtm@nic.in	4	पेटेंट कार्यालय, भारत सरकार इंटेलेक्चुअल प्रॉपर्टी राइट्स बिल्डिंग, इंडस्ट्रियल इस्टेट एसआईडीसीओ आरएमडी गोडाउन एरिया एडजसेन्ट टु ईगल फ्लास्क, जी. एस. टी. रोड, गायन्डी चेन्नई - 600 032. फोन: (91)(44) 2250 2081-84 फ़ैक्स: (91)(44) 2250-2066 ई. मेल: chennai-patent@nic.in ❖ आन्ध्र प्रदेश, तेलंगाना, कर्नाटक, केरल, तमिलनाडु तथा पुडुचेरी राज्य क्षेत्र एवं संघ शासित क्षेत्र, लक्षदीप
2	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, एंटोप हिल डाकघर के समीप, एस. एम. रोड, एंटोप हिल, मुम्बई- 400 037, फोन: (91) (22) 24137701 फ़ैक्स: (91) (22) 24130387 ई. मेल: Mumbai-patent@nic.in ❖ गुजरात, महाराष्ट्र, मध्य प्रदेश, गोवा तथा छत्तीसगढ़ राज्य क्षेत्र एवं संघ शासित क्षेत्र, दमन तथा दीव, दादर और नगर हवेली.	5	पेटेंट कार्यालय, भारत सरकार कोलकाता, (प्रधान कार्यालय) बौद्धिक संपदा भवन, सीपी-2, सेक्टर- V, साल्ट लेक सिटी, कोलकाता-700 091, भारत. फोन: (91)(33) 2367 1943/44/45/46/87 फ़ैक्स:/Fax: (91)(33) 2367 1988 ई. मेल: kolkata-patent@nic.in ❖ भारत का अवशेष क्षेत्र
3	पेटेंट कार्यालय, भारत सरकार बौद्धिक संपदा भवन, प्लॉट सं. 32, सेक्टर- 14, द्वारका, नई दिल्ली- 110 075. फोन: (91)(11) 25300200, 28032253 फ़ैक्स: (91)(11) 28034301, 28034302 ई. मेल: delhi-patent@nic.in हरियाणा, हिमाचल प्रदेश, जम्मू तथा कश्मीर, पंजाब,राजस्थान, उत्तर प्रदेश, दिल्ली तथा उत्तरांचल राज्य क्षेत्रों, एवं संघ शासित क्षेत्र चंडीगढ़		

वेबसाइट: http://www.ipindia.nic.in
www.patentoffice.nic.in

पेटेंट अधिनियम, 1970 तथा पेटेंट (संशोधन) अधिनियम, 2005 अथवा पेटेंट (संशोधन) नियम, 2006 द्वारा वांछित सभी आवेदन, सूचनाए, विवरण या अन्य दस्तावेज़ या कोई शुल्क पेटेंट कार्यालय के केवल उपयुक्त कार्यालय में स्वीकृत होंगे।

शुल्क: शुल्क या तो नगद रूप में या Controller of Patents के नाम में देय बैंक ड्राफ्ट या चेक के द्वारा भेजी जा सकती है जो उसी स्थान के किसी अनुसूचित बैंक में प्रदत्त हो जहाँ उपयुक्त कार्यालय स्थित है ।

SPECIAL NOTICE

18 Months publication as required under Section 11A of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005.

Notice is hereby given that any person at any time before the grant of Patent may give representation by way of opposition to the Controller of Patents at appropriate office on the ground and in a manner specified under section 25(1) of the Patents (Amendment) Act, 2005 read with Rule 55 of the Patents (Amendment) Rules, 2006.

Notice is also given that if any interested person requests for copies of the complete specification, drawing and abstract of any application already published, the photocopy of the same can be supplied by the Patent Office as per the jurisdiction on payment of prescribed fees of Rs.10/- per page. If any further details are required to be obtained, the same can be provided by the respective Patent Offices on request.

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SPECIAL NOTICE

Under the new provision of the Patents Act, 1970 as amended by the Patents (Amendment) Act, 2005 and Rules there under, Publication of the matter relating to Patents in the Official Gazette of India Part III, Section 2 has been discontinued and instead The Official Journal of the Patent Office is being published containing all the activities of The Patent Office such as publication of all the patent applications after 18th months , grant of patents & all other information in respect of the proceedings as required under the provisions of the Patents (Amendment) Act, 2005 and Rules thereunder on weekly basis on every **Friday**.

The Journal is uploaded in the website every Friday. So Paper form and CD-ROM form of the Journal are discontinued from 01/01/2009.

SPECIAL NOTICE

Every effort is being taken to publish all the patent applications under section 11(A) of the Patents Act. However, if duplication of publication of any application is found, then earlier date of publication will be taken for the purpose of provisional protection for applicant and Patent Office will grant Patent not before six months from the date of second publication, provided that there is there is no third party representation.

Early Publication:

The following patent applications have been published under section 11A (2) of The Patents (Amendment) Act 2005 and rule 24A of The Patents (Amendment) Rules, 2006. Any person may file representation by way of opposition to the Controller of Patents at the appropriate office against the grant of the patent in the prescribed manner under section 25(1) of the Patents (Amendment) Act 2005 read with the rule 55 of The Patents (Amendment) Rules, 2006:

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202411091218 A

(19) INDIA

(22) Date of filing of Application :22/11/2024

(43) Publication Date : 25/04/2025

(54) Title of the invention : THE ROLE OF HR ANALYTICS IN PREDICTING EMPLOYEE TURNOVER AND RETENTION

(51) International classification :G06Q10/06, G06Q0631, G06Q0639, G06Q067, G06Q10/10, G06Q10/105

(86) International Application No :NA
Filing Date :NA

(87) International Publication No: NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Human Resource (HR) analytics has emerged as a critical tool for understanding and addressing workforce challenges, particularly in the areas of employee turnover and retention. This invention examines the role of HR analytics in predicting employee turnover, identifying key factors influencing employee retention, and enabling data-driven decision-making for sustainable workforce management. By leveraging advanced analytics techniques such as predictive modeling, machine learning, and data visualization, HR professionals can identify patterns and trends that signal potential attrition risks. This invention highlights the importance of integrating HR analytics with organizational strategies to enhance employee retention efforts. It also explores challenges such as data privacy concerns, resistance to technology adoption, and the need for skill development among HR practitioners. The findings suggest that organizations employing robust HR analytics frameworks experience better workforce stability, reduced turnover costs, and improved employee satisfaction. This invention underscores the potential of HR analytics as a transformative approach to creating a resilient and engaged workforce.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/11/2024

(21) Application No.202411092705 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EARLY DISEASE DETECTION IN CROPS USING MACHINE LEARNING TECHNIQUES

(51) International classification :G06Q50/02, G06N3/08, G06T7/00, G06N3/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The idea offers a novel approach to early disease diagnosis in crops using machine learning techniques, addressing the pressing need for precision agriculture tools to increase production and sustainability. The system combines IoT-enabled devices such as drones, sensors, and cameras to collect a range of data, including spectral information, environmental factors, and high-resolution pictures. Advanced machine learning models, including convolutional neural networks (CNNs), which are able to differentiate between diseases, identify symptoms in their early stages, and precisely predict how a condition will progress, are used to assess this data. Through an intuitive mobile or web-based interface, the system analyses data in real-time and offers actionable alerts and recommendations using an edge computing or cloud-based architecture. By incorporating environmental factors like soil conditions and humidity into disease risk assessments, this scalable and reasonably priced solution provides farmers with contextualised insights. The strategy promotes quick decisions that reduce crop losses and pesticide use, and it is suitable for both smallholder and large-scale farmers. By combining cutting-edge science with practical applicability, this invention revolutionises crop disease control and advances sustainable farming practices and global food security.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/02/2025

(21) Application No.202511009295 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SELF-POWERED RADIO FREQUENCY SIGNAL GENERATOR AND METHOD OF GENERATING THEREOF

(51) International classification :H03L7/099, H03B5/12, H02J50/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A self-powered radio frequency (RF) signal generator (102) and a method (700) of generating thereof is disclosed. The self-powered RF signal generator (102) includes a voltage-controlled oscillator (VCO) circuit (106) configured to generate oscillating RF signals and provide excitation to a sensor (108). A power supply circuit (104) electrically coupled to the VCO circuit (106) and configured to provide a regulated electrical supply to the VCO circuit (106). A power detection circuit (112) electrically coupled to an output of the sensor (108) and configured to measure a power level of the RF signals received from the sensor (108). A frequency pre-scaler circuit (110) electrically coupled to the output of the sensor (108) and the power detection circuit (112). A counter circuit (114) electrically coupled to the frequency pre-scaler circuit (110). A microcontroller (116) electrically coupled to the power detection circuit (112) and the counter circuit (114). FIG. 1

No. of Pages : 30 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/12/2024
(21) Application No.202411101507 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TRACTOR OPERATED CHAFF CUTTER MACHINE

(51) International classification :A01F29/01, A01F29/00, A01F29/09
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The tractor-operated chaff cutter machine (500) comprising of two pusher rollers (60), a flywheel (75) connected to a power take-off (PTO), and multiple cutter blades (85) for chopping fodder. The said rollers (60), a flywheel (75) and the cutter blades (85) are mounted to a frame (10) wherein the rollers (60) are designed to grip materials via grooves. The flywheel (75) is connected to a power means through a telescopic propeller shaft. The cutter blades (85) are detachable for easy maintenance. An input carriage (70) with a conveyor belt (71) feeds chaff to the rollers, controlled by a forward/reverse lever (40). A chaff adjuster spring (95) allows for size adjustment of the cut chaff by modifying the gap between rollers (60), while a gearbox (30) reduces power from the PTO, enhancing fuel efficiency. To be published with Fig. 1

No. of Pages : 22 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :21/01/2025

(21) Application No.202511004776 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOLAR, IOT & AI ENABLED AND HEAD GESTURE CONTROLLED ELECTRONIC WHEELCHAIR FOR ORTHOPEDIC DIVYANGJANS

(51) International classification	:A61G0005100000, A61G0005120000, G06N0020000000, A61G0005040000, G16H0050300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a user operatable wheelchair specifically for individuals with physical disabilities. More particularly the present invention provides an automated wheelchair independently operable by the user e.g. individuals with physical disabilities. The wheelchair is incorporated with advanced technologies such as head movement-based controls for independent control of wheelchair to the user, solar power integration increases the operational duration and reduces the reliance on traditional power sources, Internet of Things (IoT) capabilities for continuous monitoring and information exchange, and artificial intelligence (AI) features, to boost user independence, protection, and quality of life.

No. of Pages : 26 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/01/2025
(21) Application No.202511006717 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HYBRID HUMAN-MACHINE WAREHOUSE AUTOMATION AND MANAGEMENT SYSTEM AND METHOD

(51) International classification	:G06Q0010087000, B65G0001137000, G06Q0030060100, G06Q0010063100, B65G0001040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Disclosed is a system (100) including a plurality of storage racks (104) arranged in a pre-defined configuration within a storage warehouse (102). The system includes a plurality of movement areas (106) formed by the arrangement of the storage racks (108), comprising first and second sets of movement areas (106a, 106b). A plurality of pick/put stations (108) are disposed on at least one point along the movement areas (106). One or more robots (110) are associated with the first set of movement areas (106a). Processing circuitry (116) is configured to: receive orders from a central system; identify locations of required items in the storage racks (104); enable robots (110) to retrieve and deliver required items to pick/put stations (108); and generate a picking/putting sequence for a human operator based a fastest path to a final station. FIG. 1 is selected

No. of Pages : 41 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/02/2025

(21) Application No.202511009616 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BIO-WASTE FIBERS TREATMENT PROCESS

(51) International classification :A61K36/9066, A61K36/77, A61K36/254, D04H1/4266, A61K36/60, D01C1/02

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
Disclosed herein is a natural treatment process for bio-waste fibres. This process comprises the steps of: a. extracting saponin by boiling a biological source in hot water for 30-120 minutes with an antimicrobial agent; b. filtering the solution and adding 10-15% naturally extracted citric acid to create a natural solution; c. soaking the fibres in the natural solution for 6-7 hours; d. washing fibres under running water for balancing pH of 7; e. drying fibres in air at 40-50°C to remove excess moisture, and f. storing naturally treated fibres in airtight content for biocomposite fabrication. Figure 6

No. of Pages : 22 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/09/2024

(21) Application No.202411068088 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COMMON HEALTH CHALLENGES IN FOREIGNERS IN INDIA

(51) International classification :A61B5/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT Many tourists worry about their health when they visit India because of the country's varied climate, environmental conditions, and the prevalence of certain diseases. This invention delves into the most common health problems seen by foreigners in India, highlighting the need of healthcare accessibility and preventive measures. Disturbances in hygiene practices, changes in food safety laws, and unfamiliar eating habits can all contribute to gastrointestinal problems in foreigners. Many people, especially first-time tourists, get traveller's diarrhoea. Pollution is another big issue for tourists, particularly in cities. Asthma, bronchitis, and allergies are among the respiratory problems linked to air pollution in big Indian cities like Mumbai and Delhi. If a foreign national has a history of respiratory illness, their condition may deteriorate while they are here. It may be challenging to receive timely and sufficient medical treatment due to cultural differences in healthcare practices and unfamiliarity with the local healthcare system. Language barriers, lack of acquaintance with standard treatment methods, and differences in medical infrastructure all contribute to treatment delays for some international patients. In the end, it will take preventative measures like pre-travel vaccinations, environmental threat knowledge, and an in-depth familiarity with India's healthcare system to fix these health issues.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/11/2024
(21) Application No.202411088209 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : LESSON PLAN PROMPTING BOARD FOR THE STUDENT TEACHER

(51) International classification :G06F17/00, G06Q50/20, G09B7/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT To assist student teachers in the process of lesson planning, the tool that has been built serves as a resource that is both comprehensive and structured. This is done to give student instructors support. It contains essential components such as the selection of themes, instructional objectives, taxonomy-based goals, instructional strategies, teaching-learning materials, and evaluation methods to guarantee that lesson plans are by effective pedagogical practices. This is done to ensure that lesson plans reflect successful pedagogical practices. The tool generates a dynamic and engaging learning environment throughout the teaching process by employing the 5 'E' educational paradigm, which comprises engage, explore, explain, elaborate, and evaluate. This is accomplished by constantly including the elements above. Because the curriculum lays a strong emphasis on experiential learning, student teachers can develop courses that are not only theoretically sound but also practically engaging. In turn, this boosts students' learning's impact on them and the meaningfulness of their education. When all is said and done, this tool provides a practical framework that not only improves the capability of designing courses but also fosters better teaching, which eventually leads to greater outcomes for students.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/02/2025

(21) Application No.202511011962 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SCRAP MATERIAL EXCHANGE AND REPURPOSING SYSTEM

(51) International classification	:G06Q30/06, G06Q30/00, G06Q10/08
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Disclosed herein is a system (100) for facilitating the exchange of scrap materials, that comprises a user interface (110) integrated into a user device (102), and configured to provide an intuitive interface for users to perform a variety of functions, a communication network (104) configured to facilitate data exchange within the system (100), a microprocessor (108) communicably connected to the user device (102) via the communication network (104), and configured to process data, the microprocessor (108) further comprising a data input module (112), a data processing module (114), a user verification module (116), a scrap listing module (118), a categorization module (122), a quality check module (124), a search and filter module (126), an order placement module (130), a payment processing module (132), an order processing module (134), an order tracking module (136), a notification module (138), and an output module (142).

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2024

(21) Application No.202411075584 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BIG DATA ANALYTICS IN FINANCIAL DECISION-MAKING: OPPORTUNITIES AND CHALLENGES

(51) International classification :G06Q10/00, G06Q40/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT In the field of financial decision-making, the use of big data analytics has brought about a revolutionary change in the method in which financial companies manage risk, uncover fraudulent activity, maximise investments, and improve customer experiences. This development has brought about a revolution in the way customer experiences are improved. This article examines the enormous opportunities and inherent challenges that are associated with the incorporation of big data analytics into financial systems. The topic of this article is the Integration of Big Data Analytics into Financial Systems. By employing contemporary methods such as machine learning, artificial intelligence, and predictive modelling, financial institutions are able to derive valuable insights from a wide variety of datasets that are complex in nature. These factors make it possible for the companies to arrive at decisions that are both more precise and more timely. The implementation of big data analytics, on the other hand, is accompanied by a number of significant obstacles, such as the integration of data, concerns over privacy, the requirement to comply with regulatory requirements, and the likelihood of bias in automated decision-making systems. These problems are all associated with the implementation of big data analytics. In this invention, which presents a comprehensive framework to handle these challenges, some of the difficulties that are addressed include providing solutions for scalable data processing, increased risk management, real-time fraud detection, and ethical use of artificial intelligence in financial decision-making. These are just some of the challenges that are addressed by this invention. Ultimately, the objective of this essay is to illustrate the revolutionary potential of big data analytics while simultaneously providing practical approaches for tackling the obstacles that financial institutions experience when seeking to utilise these technologies.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/02/2025

(21) Application No.202511012478 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ECO-FRIENDLY CONTRACEPTIVE BAIT FOR PROLONGED RODENT PEST MANAGEMENT

(51) International classification :A61K0009510000, A01M0025000000, A01M0023300000, A01M0023380000, A01N0025000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The invention discloses a ready-to-use contraceptive bait containing quinestrol nanoparticles for prolonged rodent pest management. The present bait leverages the potent contraceptive properties of Quinestrol (a synthetic estrogen), now available in a nanoformulation encapsulated within a gelatinized maize flour matrix. This innovative approach ensures improved bioavailability of Quinestrol on nanoencapsulation through the controlled release within the rodent's body. This invention presents a promising advancement in sustainable rodent pest management with extended efficacy and reduced dosage requirements.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :14/02/2025

(21) Application No.202511012502 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR PERSONALIZED NUTRITIONAL AND SUPPLEMENTATION RECOMMENDATIONS BASED ON MULTI-GENE ANALYSIS FOR ENHANCED HEALTH OUTCOMES

(51) International classification :C12Q1/68, C12Q1/6883, G01N33/68, G16H20/60, G16H50/20, G16H50/30

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT Disclosed herein is a method for personalized nutritional and supplementation recommendations based on multi-gene analysis for enhanced health outcomes (100) comprises taking a biological sample from an individual (102). The method also includes estimating encoded disease risk by analyzing genetic markers (104) associated with lactose intolerance (LCT), obesity and metabolic syndrome (FTO), omega-3 fatty acid metabolism (FADS1, FADS2), glutathione synthesis pathway (GCLC, GSS), vitamin C transporter system (SLC23A1, SLC23A2), vitamin E transport (TTPA), biotinidase deficiency (BTD), liver function (CYP1A2, GSTP1), and muscle health (ACTN3, MSTN). The method also includes conducting a dietary assessment (106) to determine the individual's nutritional needs, preferences, and intolerances. The method also includes developing a personalized diet and supplement plan (108). The method also includes providing specific dietary and supplement recommendations (110) that incorporate suitable replacements and supplements targeted toward the genetic markers identified. The method also includes continuously monitoring the adherence to the personalized diet and supplement regimen and the individual's health outcomes (112).

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :15/02/2025

(21) Application No.202511013181 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HEAT CHAMBER TO PERFORM IN-SITU MECHANICAL, TENSILE AND FATIGUE TESTS ON UNIVERSAL TESTING MACHINE

(51) International classification :G01N3/18, H05B3/28
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Embodiments disclose a portable heat chamber to perform in-situ mechanical tensile and fatigue tests at elevated temperatures on universal testing machine, comprising: a double-walled ceramic heater including an inner ceramic layer housing a nichrome wire heating element, and an outer ceramic layer separated from the inner ceramic layer by a cavity filled with an insulating material covering the top, bottom and entire periphery; a stainless steel outer protective casing rigidly connected to the ceramic heater, providing structural stability and portability; a temperature control system comprising a PID controller configured to regulate temperature within a range of 40°C to 600°C, at least one solid-state relay(s), SSR(s), for efficient power management, at least two thermocouples positioned to monitor both the chamber temperature and the specimen temperature; and a mounting arrangement including a mild steel frame with adjustable clamps for integration with universal testing machines (UTMs). FIG.1

No. of Pages : 28 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/02/2025

(21) Application No.202511013291 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM FOR ENHANCING RATING-BASED RECOMMENDER SYSTEMS THROUGH USER TEXTUAL REVIEW ANALYSIS

(51) International classification :G06Q30/0251, G06F40/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a system and method for enhancing rating-based recommender systems by integrating user textual review analysis. Traditional recommendation engines rely solely on numerical ratings, often overlooking valuable contextual insights from user reviews. This invention employs natural language processing (NLP) to extract sentiment, contextual keywords, and feature-specific preferences from textual data. A sentiment-driven integration engine correlates extracted insights with numerical ratings to refine recommendation algorithms, improving accuracy and personalization. The system includes a feedback-driven continuous learning mechanism to dynamically adapt recommendations based on evolving user preferences. Additionally, a personalization and explainability layer enhances transparency by providing contextual justifications for recommendations. The system is scalable, utilizing hybrid databases and cloud-based architecture for efficient data processing. This invention significantly improves recommendation relevance, user engagement, and trust across various industries, including e-commerce, entertainment, and content streaming services.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/02/2025

(21) Application No.202511017130 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A LANGUAGE-AGNOSTIC TELECOM ADVISORY FOR CONNECTING PATIENTS AND PHILANTHROPIC HEALTHCARE IN REMOTE INDIA

(51) International classification	:G06F40/58, G06N20/00, G06N3/08, G06F40/40
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
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(57) Abstract :
The present invention provides a language-agnostic telecom platform for connecting patients with philanthropic healthcare in remote India designed to connect patients in remote areas of India with healthcare services. Using existing telecom infrastructure, the system ensures accessibility even in low-connectivity regions, without relying on high-speed internet. The platform utilizes AI and natural language processing (NLP) to facilitate real-time, multilingual communication between patients and healthcare providers. It categorizes medical cases as routine or emergency and prioritizes critical cases for immediate attention. The said platform also integrates philanthropic healthcare networks, connecting users with NGOs, volunteer doctors, and charity hospitals to ensure affordable and equitable access to healthcare. A voice-based interface makes the system easy to use for people with low digital literacy. Additionally, the system integrates ASR to convert spoken language into text, NMT using transformer-based models like mBART and MT5 and TTS for generating natural, dialect-specific speech output, while an AI-powered scheduling module processes keyword-based inputs to arrange regular or emergency consultations.

No. of Pages : 44 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/08/2024

(21) Application No.202411062297 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : THE USE OF ARTIFICIAL INTELLIGENCE IN TOURISM INDUSTRY OF INDIA

(51) International classification :G06Q0050140000, G06Q0099000000, A61K0036570000, G99Z0099000000, A61K0036790000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT Lots of people are curious about how the tourism industry may use artificial intelligence (AI). When it comes to the expansion and improvement of the world's tourist industries, AI brings about huge changes. Artificial intelligence (AI) has the potential to revolutionize India's tourist sector, but it is also an extremely dangerous endeavour. Indian society and economy are not yet ready to support AI-based businesses. The potential benefits and drawbacks of artificial intelligence in India's tourism industry are explored in this invention. This invention delves at the opportunities and challenges faced by India's tourism sector due to the country's present economic and social climate.

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/02/2025

(21) Application No.202511014716 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART LOCKING SYSTEM WITH INTELLIGENT KEY

(51) International classification	:G07C0009000000, E05B0047000000, G06V0040130000, E05B0047060000, G06F0021320000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a Smart Locking System (SLS) with an Intelligent Key (SLIK) comprising a transmitter and receiver module. The SLIK utilizes a compact, handheld, and lightweight module for operation, enhancing user convenience; said module is further integrated with a smartphone for added versatility. The SLS prioritizes security by restricting operation to authorized individuals through fingerprint recognition. Unlike existing smart locks that often rely on fixed devices, said system employs a handheld module, offering greater flexibility and user-friendliness. Furthermore, it presents a cost-effective alternative to commercially available smart lock systems. The transmitter module, a portable device, incorporates a fingerprint sensor, driver IC, two relay units, and a transmitter unit. Upon successful fingerprint verification, the driver IC triggers the relay system, activating the transmitter. The transmitted signal is then received by the receiver module affixed to the SLIK on the door. The receiver module, integrated with the door mechanism, comprises an RF receiver, an adapter unit, and a solenoid mechanism. Upon receiving the authenticated signal, the receiver activates the solenoid, unlocking the SLIK.

No. of Pages : 51 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/03/2025

(21) Application No.202511021892 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR GENERATING A CRANIAL IMPLANT FOR A PATIENT AND ITS METHOD THEREOF

(51) International classification	:A61F0002280000, A61F0002300000, G06T0007000000, G06T0007110000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a system for generating a cranial implant for a patient and its method thereof. The present invention introduces a fully automated, end-to-end system for cranial implant generation, addressing the limitations of existing manual and semi-automated techniques. Unlike prior solutions that rely on CAD modeling and mirroring techniques, this invention employs a novel deep learning architecture to generate 3D-printable implants directly from CT data within seconds. It features an integrated preprocessing pipeline, extensive defect generation and augmentation, and a user-friendly web interface. The invention ensures superior geometric accuracy and seamless surface alignment, validated through mechanical, load-bearing, and clinical assessments. By significantly reducing processing time, improving implant fitment, and enhancing generalizability across diverse defect cases, this invention offers a highly efficient, accurate, and clinically validated solution for cranioplasty procedures.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/10/2024

(21) Application No.202411077074 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : THE IMPACT OF FINANCIAL STATEMENT INTEGRATION IN MACHINE LEARNING FOR STOCK PRICE PREDICTION

(51) International classification :G06Q 40/04, G06F17/18, G06N20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The objective is to combine data from financial articles into machine learning models to increase the accuracy of stock price forecasting. In general, this makes it possible to make more accurate predictions. Consequently, this enables the calculation of forecasts that are more accurate than they would have been otherwise. When it comes to financial models, those that are considered to be traditional typically fail to take into consideration crucial financial indicators such as levels of debt, income, and profitability. This is generally the case. This new innovation not only takes use of structured financial data, but it also incorporates unstructured insights that are gathered through interactions between managers. This is a significant advancement. It is possible to accomplish this goal through the utilization of natural language processing (NLP), which is the execution of this technology. The utilization of deep learning models helps it discover patterns within complex data, which ultimately leads to an improvement in the accuracy of predictions brought about by the system. Deep learning is the method that is utilized to achieve this goal. Investors can make more informed financial decisions on their investments as a result of the invention, which offers them more accurate stock price forecasts. This is made possible by the utilization of real-time data updates and improved validation. As a direct result of the invention, investors now can make more informed decisions regarding their financial investments. This is a significant advancement.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/11/2024

(21) Application No.202411084805 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED ADAPTIVE LEARNING SYSTEMS: REVOLUTIONIZING CLASSROOM EDUCATION

(51) International classification :G06N20/00, G09B19/00, G06Q50/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT This AI-powered adaptive learning technology revolutionises classroom education with real-time personalisation and engagement. Traditional educational paradigms struggle to meet students' different requirements, resulting in comprehension and disengagement gaps. This system uses artificial intelligence and machine learning to build dynamic, individualised learning routes based on each student's abilities, progress, and engagement. Real-time material and instructional adjustments are made based on academic performance, emotional response, and learning pace. Active insights and recommendations from an integrated teacher dashboard let educators make data-driven instructional decisions, give targeted support, and optimise classroom management. The approach also helps students develop personally and socially by matching group activities to ability levels. Based on accessibility and inclusivity, the system supports assistive technologies and multilingual content delivery to give all students equal access. The system uses GDPR and FERPA-compliant data security mechanisms to protect student data and ensure ethical data use and transparency. Its device interoperability and interaction with classroom technology enable easy implementation in K-12, higher education, and professional training contexts. This invention improves academic performance, engagement, collaboration, and inclusion, setting a new standard for adaptive learning in the classroom.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/03/2025
(21) Application No.202511021604 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED HUMAN GAIT MONITORING SYSTEM USING VIBRATIONAL SIGNALS

(51) International classification	:A61B0005000000, G16H0050200000, G06N0020000000, A61B0005110000, G06N0003080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a vibro diagnosis and therapy (V-DAT) system designed to diagnose and treat various diseases using vibration signals generated by a patient's gait. The system comprises geophone sensors 133 placed along three predefined paths such as outer (112, 113), middle (123, 124), and inner (101, 102) to capture low- and high-frequency vibration signals, these said signals are processed in real-time using amplifiers (103,114,125), data storage (104-105, 115-116, 126-127) and artificial intelligence (AI) techniques such as machine learning for feature extraction (106-107, 117-118, 128-129) and classification (108-109, 119-120, 130-131). The outer path performs initial diagnosis, the middle path delivers vibration-based therapy tailored to the detected condition, and the inner path refines or confirms the diagnosis, creating an integrated, non-invasive solution for disease diagnosis and therapy.

No. of Pages : 47 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/03/2025

(21) Application No.202511026289 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : OPTICAL WAVEGUIDE-BASED TEMPERATURE SENSOR FOR REAL-TIME MONITORING IN MICROFLUIDIC AND LAB-ON-A-CHIP APPLICATIONS

(51) International classification	:B01L0003000000, H01L0027146000, B01L0007000000, G02B0006293000, G02B0006120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
This invention describes an optical waveguide-based temperature sensor designed for use in diverse microfluidic applications. The sensor integrates a U-shaped optical waveguide with adjacent sensor and sample channels within a microfluidic platform. The sensor channel is filled with a temperature-sensitive fluid whose refractive index changes in response to temperature variations, while the sample channel carries fluid undergoing biochemical or chemical reactions that induce thermal changes. As light propagates through the waveguide, variations in the refractive index of the sensing fluid cause corresponding changes in light absorption, which are detected by a photodiode. This allows for real-time, precise temperature monitoring in micro-scale systems, with sensitivity to temperature changes as small as 0.5°C. The system is cost-effective, easy to fabricate, and highly integrable into Lab-on-a-Chip (LOC) or micro-total analysis systems (Micro-TAS). Its unique ability to measure localized temperature changes makes it ideal for applications in biochemical reactions, diagnostics, and microfluidic research.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/03/2025
(21) Application No.202511026290 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR AUTOMATED MEDICATION MANAGEMENT AND REMOTE MONITORING VIA SMART PILL DISPENSING

(51) International classification :A61J0007040000, G16H0020130000, A61B0005000000, A61J0007000000, G16H0040670000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
This invention describes a ssystem for Automated Medication Management and Remote Monitoring via Smart Pill Dispensing designed to enhance medication adherence, particularly for individuals with chronic conditions. The system integrates an Arduino Mega 2560, SG90 Micro 2560 servo motors, Nextion LCD touch display, and a suite of sensors, including an Ultrasonic Sensor, Photo Transistor IR Light Sensor, and a 16-Channel 12-bit PWM/Servo Driver, to automate the dispensing of medications based on pre-set schedules. Real-time monitoring ensures accurate dosage, while alerts via Speaker and display notifications remind users to take their medication. The system also features error detection capabilities, providing users and caregivers with immediate notifications of issues such as blockages or missed doses. With its seamless integration, the system ensures enhanced medication adherence, user independence, and caregiver oversight, ultimately improving patient outcomes and safety.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/03/2025

(21) Application No.202511026291 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INTEGRATED MONITORING ARMBAND FOR OCCUPATIONAL HEALTH AND SAFETY IN THE INDUSTRIAL ENVIRONMENT

(51) International classification :A61B0005024000, G08B0021020000, H04W0004380000, G16H0050300000, A61B0005000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention describes an Integrated Monitoring Armband for Occupational Health and Safety designed to enhance worker safety in industrial environments. The armband continuously monitors environmental conditions, including air quality and temperature, while also tracking the worker's physiological health, specifically heart rate. The system integrates multiple sensors—air quality, temperature, and pulse—into a single wearable device, providing real-time data that is processed by a microcontroller. Upon detecting unsafe conditions, the armband triggers immediate alerts through visual, audible, and vibration signals, ensuring the worker is notified of any danger. Additionally, the system features wireless communication, enabling remote monitoring by supervisors through a connected platform. Powered by a rechargeable lithium-ion battery, the armband offers long-lasting performance with efficient power management. This invention significantly reduces the risk of health-related incidents in hazardous industrial settings by providing proactive, real-time safety alerts and remote oversight, enhancing both worker well-being and operational efficiency.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/02/2025

(21) Application No.202511018216 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SIMULTANEOUS MULTI-VARIABLE DATA ACQUISITION AND ANALYSIS EQUIPMENT

(51) International classification :G16H10/60, G16H50/20, G06N20/00, G16H80/00, G16H50/70

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system, method, and integrated hardware and software platform for multi-variable clinical data acquisition, analysis, and decision support, integrating IoT-enabled sensors, certified diagnostic devices, artificial intelligence, and secure communication protocols. The subject invention normalizes multi-source data, maps patient complaints to standardized medical classifications, and provides clinicians with real-time diagnostic and therapeutic recommendations. It improves diagnostic accuracy, reduces healthcare delivery time and costs, and ensures compliance with medical and data protection regulations. Refer Fig. 3

No. of Pages : 35 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/03/2025
(21) Application No.202511022330 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMARTPHONE ENABLED ELECTROCHEMICAL SENSOR FOR THE DETECTION OF ANTIBIOTIC DRUG CHLORAMPHENICOL

(51) International classification :H01M0004900000, B01J0037040000, C08K0003040000, C01B0032194000, B82Y0040000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention related to a method of preparation of GO@MWCNT for the detection of Chloramphenicol comprises of preparing Graphene Oxide (GO), wherein the preparation of GO comprises of mixing of graphite powder, sulphuric acid (conc.), sodium nitrate in an ice bath, mixing of potassium permanganate at a slow rate in the ice bath and stirring for a predefined period T1, adding deionized water to the mixture obtained, adding hydrogen peroxide to solution obtained, separating solid GO obtained by any separating means, rinsing solid GO obtained with distilled water and dilute hydrochloric acid, drying the solid GO obtained by any drying means, dispersing GO obtained in deionised (DI) water and putting in sonication, dispersing Multiwalled carbon nanotube (MWCNT) in DI water and putting in ultrasonication, mixing GO obtained and MWCNT obtained in a ratio of 1:2 by volume, putting mixture obtained in sonication for a predefined time T2, filtering, drying of composite obtained and extracting and characterizing GO@MWCNT. Fig. 4

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202511031722 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI BASED INTEGRATING ENERGY SYSTEMS FOR ELECTRIC VEHICLES

(51) International classification :B60L53/00, B60L55/00, G06N3/08, G06N20/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to an AI-driven energy management system for electric vehicles (EVs). The AI-driven energy systems optimizes battery performance, predicts maintenance needs, and enables smart charging strategies, leading to improved vehicle longevity and cost efficiency. Furthermore, AI facilitates grid interaction through Vehicle-to-Grid (V2G) technology, allowing EVs to contribute to energy distribution. This intelligent energy management not only enhances individual vehicle performance but also plays a crucial role in stabilizing power grids, reducing carbon footprints, and driving the future of sustainable mobility.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202511031736 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM FOR MANAGING MICROGRIDS USING A DIGITAL TWIN

(51) International classification	:H02J0003380000, G05B0017020000, G06Q0050060000, H02J0003320000, H02J0001120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a method and system of managing microgrids (106A-N) using a digital twin (120). In one embodiment, a method of managing a microgrid (106) using a digital twin (120) including receiving data associated with one or more components of the microgrid (106) in real-time from one or more sensors, applying the received data associated with the one or more components of the microgrid (106) to a digital twin (120) of the microgrid (106) in real-time, computing an optimal energy management strategy for the microgrid (106) based on the digital twin (120) using a microgrid simulation model (122), and applying the optimal energy management strategy to the microgrid (106) in real-time. [FIG. 1]

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032570 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-ENABLED CAMERA DEVICE FOR PET ADOPTION AND MATCHING

(51) International classification :A01K0029000000, G16H0015000000, G16H0050700000, G06Q0030025100, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a method for matching prospective pet owners with suitable pets using advanced data analysis techniques. The method involves capturing animal behavior data through optical sensors, such as high-resolution cameras, placed in environments like shelters, foster homes, or pet stores. The recorded footage is pre-processed and analyzed using machine learning algorithms to identify behavioural traits. Additionally, the system may capture prospective pet owner profiles using audio recordings and Natural Language Processing (NLP) algorithms to assess personality traits and preferences. The system generates compatibility scores, facilitating optimal pet-owner matches by comparing the analyzed animal behavior data with owner profiles. Based on these scores, personalized adoption recommendations are provided, ensuring a better fit between pets and owners. This technology enhances the pet adoption process by leveraging AI-driven analysis, improving adoption success rates, and promoting responsible pet ownership.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032571 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DRONE-BASED SURVEILLANCE SYSTEM FOR THE VESSELS PLYING IN PORT AREAS AND ENCROACHMENTS

(51) International classification	:B64C0039020000, H04L0009400000, G05D0001000000, B64U0010130000, B64U0010140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a cutting-edge drone-based surveillance system developed for ship monitoring and encroachment detection in port regions. The system employs an octocopter arrangement with eight anti-rotating propellers to provide improved stability and payload weight. It also has a FLIR thermal camera, multi-spectral sensors, and LiDAR technology to monitor in real-time and detect anomalies. There are integrated AI algorithms that evaluate data to recognize unauthorized entry and environmental threats. The quadcopter features a replaceable battery module and magnetic recharging system for uninterrupted flight. Its autonomous navigation system supports real-time path planning, collision detection, and return-to-base capability. Data is transmitted securely using encrypted communication protocols. Safety features like propeller shielding, airbags, and longer landing legs provide protection in use. The present invention greatly improves maritime surveillance effectiveness through real-time intelligence, autonomous operation, and integration with current port security systems

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032572 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HELMET OPHTHALMIC GLASS WITH ADJUSTABLE OPTICAL REFRACTIVE POWER FOR ENHANCED VISION

(51) International classification	:A42B0003040000, A42B0003060000, H04L0067100000, G02C0007020000, G02C0007080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This present invention relates to an innovative helmet with integrated adjustable refractive lenses, designed to address the vision correction needs of riders while ensuring optimal safety and comfort. In contrast to conventional helmets that require external prescription glasses or contact lenses, this design incorporates built-in, customizable lenses that can be adjusted to match a wide range of prescriptions. The helmet enhances user experience with anti-fog, scratch-resistant, and UV-protection features, ensuring clear vision in various environmental conditions. It reduces discomfort and potential hazards associated with ill-fitting glasses inside a helmet by eliminating the need for separate eyewear. The ergonomic design ensures a secure and snug fit, improving both functionality and convenience for riders. This solution is particularly beneficial for motorcyclists, cyclists, and sports enthusiasts, offering seamless vision correction without compromising protective integrity. The combination of optical innovation and safety makes this helmet a groundbreaking advancement in protective headgear technology

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032294 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED AUTONOMOUS THREAT INTELLIGENCE AND RESPONSE SYSTEM USING REAL-TIME ADAPTIVE ANALYTICS

(51) International classification :H04L0009400000, G06N0020000000, G06N0003045000, G06N0020100000, G06F0016280000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an AI-powered autonomous threat intelligence and response system that utilizes real-time adaptive analytics for detecting, analyzing, and mitigating cybersecurity threats. The system comprises a Data Collection Module for aggregating data from various sources, a Data Preprocessing Engine for standardization, and a Threat Detection Module employing machine learning techniques to identify threats based on patterns, anomalies, and predictive analytics. A Threat Analysis Module categorizes and prioritizes threats, while an Automated Response Engine initiates mitigation actions. An Adaptive Learning Module continuously refines detection models using transfer learning and curated intelligence feeds. The system includes a user-friendly interface providing visual analytics, alerts, and customization options. By integrating AI technologies, the invention enhances network security through dynamic, context-aware decision-making, ensuring robust protection against evolving threats.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202511032361 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NOVEL COMPOSITION FOR SKIN HYDRATION IN SURFACTANT BASED CLEANSING SYSTEMS

(51) International classification :A61Q0019000000, A61K0008340000, A61B0005000000, A61K0008370000, A61K0008920000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a rinse off cosmetic product providing moisturization and hydration effect. The cosmetic product comprises a system for enhanced skin hydration and moisturization. The system utilizes a proprietary blend of hygroscopic agents, emollients, and humectants. The system imparts synergistic effect due to presence of the components at a specified amount and the way the blend is provided, which promotes superior cutaneous hydration and moisturization. The blend's stability and efficacy are maintained across various formulation types. The improved hydration benefits are long-lasting, even after the product is rinsed off.

No. of Pages : 47 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202511032393 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN DYNAMIC MOBILITY AND REHABILITATION SYSTEM

(51) International classification :A61B0005000000, A61B0005110000, A61H0001020000, A63B0071060000, B62D0057032000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An AI-driven dynamic mobility and rehabilitation system,, comprising at least two pairs of rods 101 interconnected by two elongated bars 113 and is connected by a spindle 102 and ball bearing arrangement, a rigid belt 104 providing a walking platform for a patient and is supported by rollers 114 a bi-directional motor provides rotational motion to the belt 104, a U-shaped frame 105 holds an imaging unit 106 to monitor the patient's movement, a wearable band's 201 sensors detects real-time vital signs, multiple pressure sensors 107 determine pressure applied by the patient while walking, at least two side rails 108 include a two-axes lead screw arrangement 109, motors, and clamping unit 110 to provide dynamic support to the patient and holographic projector 112 projections on the belt 104 regarding foot placement according to the detected walking pattern.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032394 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SECURED COMPARTMENTALIZED STATIONARY STORAGE DEVICE

(51) International classification	:F21Y0115100000, D03D0047360000, H04N0023600000, G10D0013090000, A43B0003340000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A secured compartmentalized stationary storage device, comprises of a hollow cuboidal-shaped body 101 segregated into multiple compartments 201 utilized for storing different stationaries, a lid 102 installed with the body 101 to open/close the body 101, a mechanical 3-digit combination padlock 103 integrated with the lid 102 for enabling authorized access to the compartments 201, a mechanical linkage unit 202 connected to a keyboard-type buttoned plate 203 provided with each of the compartment to open the compartment, a sliding bottom tray 104 provided inside the body 101 for hiding the compartments 201, LED (Light Emitting Diode) indicators 204 integrated with the compartments 201, to provide visual feedback regarding current occupancy status, an imaging unit 106 to measure and detect dimensions of stored items, a pair of motorized sliding units 302 to translate plates 301 of compartments 201 to alter size of the compartments 201.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032573 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ROLLER COMB WITH ADJUSTABLE BRISTLES AND INTEGRATED HAIR DRYER

(51) International classification :A45D0020120000, A61Q0005060000, A61Q0005120000, A45D0020500000, G06T0019200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention is a multifunctional hair styling comb that integrates a rolling bristle mechanism and an air-blowing system for efficient and versatile hair management. The rolling handle allows users to manually adjust the bristles—retracting them for smooth styling or extending them for detangling and combing. The comb features an integrated air blower that provides hot and cold airflow, eliminating the need for a separate hairdryer. Small airflow distribution holes ensure even heat application, aiding in straightening or curling based on styling needs. The device operates through a rechargeable battery or a plug-in adapter, making it suitable for both home and travel use. This all-in-one solution enhances convenience by merging multiple hair care functions into a single, compact device

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032574 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BROADBAND AND HIGH GAIN ANNULAR RING MICROSTRIP ANTENNA FOR KU BAND APPLICATIONS

(51) International classification	:H01Q0001380000, H04W0052280000, H04L0005000000, H01Q0001500000, G06F0111040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention is an effective microstrip antenna design is presented in this work, featuring an annular ring configuration with two stacked circular rings, eight smaller rings inside, and two additional circular elements on the feed transformer. The antenna is implemented on an FR4 substrate, optimized for Ku band applications in radar and satellite systems. The integration of various slot types and feed transformer modifications enhances the antenna's uniqueness and performance. This updated design significantly improves both the bandwidth and gain. With a bandwidth of 3.16 GHz and a gain of 8.68 dB, the proposed antenna demonstrates excellent suitability for Ku band communication. The antenna's efficiency is further highlighted through a comparison with similar designs, showcasing its superior performance in terms of bandwidth and gain. Simulation results validate the enhanced performance, confirming that this design offers a promising solution for improving communication reliability and efficiency in radar and satellite applications.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032576 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED EXTERNAL DEFIBRILLATOR (AED) DRONE SYSTEM FOR REMOTE CARDIAC ARREST RESPONSE

(51) International classification	:A61N0001390000, A61B0005000000, G05D0001000000, B64C0039020000, G16H0040670000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an autonomous Automated External Defibrillator (AED) drone system for rapid emergency response to cardiac arrest incidents. The system includes a UAV equipped with an AED unit capable of delivering life-saving shocks, an integrated oxygen supply, and sensor technology for detecting cardiac emergencies in remote locations. The AED unit features electrocardiogram (ECG) monitoring to assess cardiac activity and optimize defibrillation. A solar-based power mechanism ensures operation in off-grid areas. The system autonomously navigates to the patient's location, identifies the patient using optical sensors, and deploys the AED with adaptive intervention mechanisms. A communication module transmits real-time updates to emergency responders, while a data logging module records intervention details. By reducing response time and improving accessibility in rural and hard-to-reach areas, the invention enhances survival rates in cardiac emergencies through an efficient, scalable, and autonomous medical intervention system.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202511032395 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE SAFETY DEVICE

(51) International classification :G02B0027010000, G01N0015060000, G06V0020580000, G08G0001160000, G09B0021000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A sensory enhanced wearable safety device, comprising a member 101 adapted to be worn over a head of a user, multiple imaging units 116 capture an omnidirectional view of a vicinity of the device, a traffic module determines approaching vehicles, traffic sign, road hazards, blind spots, an acoustic transducer 104 pickup audio from the vicinity, an echolocation unit echolocates obstacles, a fusion module fuses data gathered from the imaging units 116, the acoustic transducer 104s and the echolocation unit, to determine obstacles near and distance, an alert unit 105 alert the user regarding obstacle, a compartment 108 with a drawer mechanism 109 for storing of eyewear, a clamp 110 secures the eyewear, a particulate matter sensor determines an ambient air quality and display on a HUD 111 (head up display), carbon filters 112 to purify air entering the member 101 for breathing of the user.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025

(21) Application No.202511032396 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PARKING MANAGEMENT SYSTEM

(51) International classification	:G08G0001140000, B62D0015020000, G08G0001160000, G08G0001000000, G06V0020580000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A parking management system comprises of an imaging unit 101, integrated at an entrance 102 of a parking space 103, to validate a vehicle entering within the parking space 103 via a motorized barrier 104 operatively coupled with a microcontroller for opening / closing the entrance 102, a central server linked with the microcontroller configured to details of each vehicle along with a parking spot of the vehicle within the parking space 103, a dual-axis lead screw arrangement 105 installed within the parking space 103 to translate a holographic projection unit 106 for navigating the user towards the parking spot, multiple parking monitoring sensors deployed over each parking spot indicating the parked vehicles and space availability, a set of X-ray and Gamma ray detectors 107a, 107b integrated at the entrance 102 to scan the vehicle for checking presence of one or more items categorized as illegal items.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032397 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SUSTAINABLE AIR FILTRATION WINDOW

(51) International classification	:H01L0031054000, F24S0030000000, E06B0009240000, E06B0009400000, H02S0010300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A sustainable air filtration window, comprising a frame 101 installed with a window of a building having a motorised roller 102, containing a spool 103 of a pliable member 113 with photovoltaic cells 104 for absorption of incident solar energy and conversion into electrical energy, multiple telescopic grippers 105 gripping the deployed member 113 to angle the member 113 towards incident solar energy, a sun sensing means continuously detects sun's azimuth and elevation, multiple transparent strips 106 via ball and socket joints 107, to enable partial blocking of sunlight, a temperature sensor detects an internal and external temperature of the building, multiple sprayers 108 sprays a mist of water to reduce pollutants by wet scrubbing, an air quality sensing unit monitors ambient pollutant concentration and a pair of sliding units 109 with a mesh fabric 110 attached to prevent pollutants from entering into the building.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202511032398 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : STEREOCHROMATIC VERGENCE THERAPY DEVICE FOR VISUAL REHABILITATION

(51) International classification :G02B0027010000, A61B0003110000, G03B0021640000, A61B0003080000, A61H0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A stereochromatic vergence therapy device for visual rehabilitation comprises of a frame 101 resembling structure of a trail frame 101 to accommodate interpupillary distance (IPD) of a patient, an IPD ruler 102 positioned on a slide mount 103 of the device providing a reference point for placement of slides 105, a platform 104 configured to securely mount a series of slides 105 over integrated grooves 106 to modify visual stimuli provided to patient, the slides 105 include a random dot pattern, difference in color of dots induces an illusionary depth perception in patient due to chromatic aberration effects, based on difference in wavelength of two different colors used in slides 105, creating transverse chromatic aberration leading to depth perception.

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/02/2025

(21) Application No.202511011063 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ANTI-INFLAMMATORY COMPOUND

(51) International classification :A61P29/00, A61K31/352, C07D311/02, C07D311/04

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses anti-inflammatory compounds. Particularly, the invention relates to an efficient anti-inflammatory compound having a Molecular Weight (MW) in a range of 260 g/mol to 460 g/mol, an octanol/water partition coefficient in a range of 0.03500 to 2.00000, and a Topological Polar Surface Area (TPSA) in a range of 85 to 175 Ångströms2. The anti-inflammatory compounds exhibit IC50 value ranging from 25.0 µgm to 45.0 µgm, preferably ~35.0 µgm, for COX-1 enzyme, and IC50 value ranging from 86.0 µgm to 106.0 µgm, preferably ~96.0 µgm, for COX-2 enzyme.

No. of Pages : 41 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202511026981 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A HOUSING FOR A MOBILE POWER STATION

(51) International classification	:H02J0007000000, H04M0001020000, G06Q0010087000, G06Q0010063100, G06F0003048470
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A modular, portable, and protective housing for a mobile power station. The housing includes a base configured to bear the load of the mobile power station, a protective enclosure configured to removably enclose a battery and an electronic circuit board of the mobile power station, and a load management system configured to distribute and manage the load of the mobile power station.

No. of Pages : 37 No. of Claims : 25

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202511031567 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SELF-HEALING CONCRETE COMPOSITION FOR MARINE AND COASTAL INFRASTRUCTURE APPLICATIONS

(51) International classification :C04B0028020000, C04B0028040000, C04B0111000000, C04B0024260000, C04B0024240000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure proposes a self-healing high strength concrete composition (100) exhibits enhanced resistance to chloride and sulphate attack, thereby ensuring structural integrity and extended service life in aggressive marine environments. The self-healing concrete composition 100 comprises 0.4 to 0.8 weight percentage of bio consortium culture (102), 0.2 to 1.5 weight percentage of wollastonite (104), 1.5 to 2.5 weight percentage of micro silica (106), 0.5 to 2 weight percentage of fly ash (108), 12 to20 weight percentage of a cement (110), 4.5 to 7 weight percentage of water (112), 20 to 25 weight percentage of a fine aggregate (114), 28 to 32 weight percentage of a primary coarse aggregate (116), 19 to 22 weight percentage of a secondary coarse aggregate (118), 0 to 0.5 weight percentage of a urea (120), and 0.1 to 0.5 weight percentage of calcium lactate (122). The proposed self-healing concrete composition (100) exhibits superior compressive and flexural strength, achieving high early-age strength and sustained mechanical performance over time.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033314 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR CREATING EMBEDDINGS FOR A KNOWLEDGE DATABASE

(51) International classification	:G06N 5/00, G06N 5/02, G06N 5/022
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
A system (108) and a method for creating embeddings for a knowledge database (114) are disclosed. The method (300) includes receiving, by a processor (202), one or more data inputs from one or more user sources (110a, 110b, 110c…110n). Furthermore, the method (300) includes, by the processor (202), segmenting the one or more data inputs into a plurality of semantic chunks. The method includes converting, by the processor (202), the plurality of semantic chunks into a plurality of embeddings using an embedding model. The method includes clustering, by the processor (202), the plurality of embeddings based on at least one distance metric. The method includes reconstructing, by the processor (202), the plurality of semantic chunks based on the clustered plurality of embeddings to be stored in the knowledge database (114).

No. of Pages : 44 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511032892 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEEP LEARNING-BASED SUPER-RESOLUTION FRAMEWORK FOR ENHANCED SURVEILLANCE: IMPROVING LOW-RESOLUTION CCTV FOOTAGE WITH OBJECT DETECTION AND FACIAL RECOGNITION.

(51) International classification	:G06N0003045000, G06V0040160000, G06V0020520000, G06N0020000000, G06V0020400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention introduces a deep learning-based framework for advanced surveillance, integrating object detection and facial recognition to enhance video analysis. The framework employs an Efficient Sub-Pixel Convolutional Neural Network (ESPCN) augmented with hybrid attention mechanisms and multi-frame aggregation, enabling selective enhancement of critical regions such as faces and objects. By leveraging temporal coherence across video frames, the system minimizes motion artifacts and reconstructs fine details, even in dynamic scenes. To enable real-time deployment on edge devices such as the NVIDIA Jetson Nano, the model is optimized through quantization and pruning, ensuring efficient computation without compromising performance. Additionally, ethical safeguards are embedded within the framework to uphold privacy and fairness. Sensitive regions can be anonymized during processing, and strict access control mechanisms are implemented to regulate data usage responsibly. The present system achieves state-of-the-art image quality, as demonstrated by improvements in Peak Signal-to-Noise Ratio (PSNR) and Structural Similarity Index Measure (SSIM). Its seamless integration with object detection and tracking systems highlights its versatility across various applications, including law enforcement, public safety, and smart city initiatives. By bridging the gap between low-resolution footage and actionable insights, this invention establishes a new standard for intelligent and ethical surveillance systems.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511032921 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS FOR EXTENDING THE SHELF LIFE OF APPLE AND CARROT PEELS FOR CATTLE AND POULTRY FEED

(51) International classification	:A23K1/16, A23B7/16, A23K10/37, A23K10/12
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention relates to a method for extending the shelf life of apple and carrot peels, which are by-products of small-scale food processing industries involved in the production of Murabba (sweet fruit preserve), candies etc, for use as cattle and poultry feed. This method allows small-scale processors to preserve peels efficiently, thereby reducing transportation costs and enabling bulk transport to cattle and poultry feed producers and dairy farms.The Invention provides an economical and sustainable method for preserving fruit and vegetable peels, reducing waste, and enhancing their value as cattle feed. It addresses the challenges faced by small-scale food processors by enabling long-term storage and cost-effective transportation of peels to feed manufacturers and dairy farmers.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202511032969 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A LIBRARY MANAGEMENT SYSTEM AND METHOD THEREOF

(51) International classification	:G06Q0010087000, G06Q0020400000, G16H0040200000, H04W0004800000, G06Q0010060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A library management system (100) is disclosed. Further, the system (100) comprising a user interface (102) configured to allow a user to provide one or more inputs. Further, at least one processor (106) is configured to compare a data from a central database (108) to determine availability of book along with location of book. Further, display the title, author, availability status, specific shelf location of the book. Further, display a digital map showing the shortest path to the location of book. Further, a user interacts with a NFC reader by tapping NFC enabled user interface (102) or library NFC reader against the NFC tag of the book. Further, the at least one processor (106) is configured to display a prompt with a confirmation message on the user interface (102) to proceed with book issuance. <>

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032577 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD OF PREPARATION OF KIMBAP WRAP FILM FROM RED RICE

(51) International classification :A23P0020200000, A23L0007196000, A23L0029256000, A23L0005100000, A23G0003340000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a method of preparation of red rice-based Kimbap wrap, providing a healthier and sustainable alternative to traditional seaweed wraps. A method for producing a red rice-based Kimbap wrap, comprising the steps of: selecting high-quality red rice varieties; cleaning and soaking the red rice for a predetermined period to enhance texture; steaming or boiling the soaked rice under controlled conditions; mashing or blending the cooked red rice into a semi-paste while retaining some grain texture; incorporating natural food-grade binding agents; spreading the mixture onto a non-stick surface or mold to form uniform sheets; subjecting the sheets to controlled drying processes at a temperature range of 40°C to 80°C to remove excess moisture while maintaining flexibility; cutting the dried sheets into standardized sizes for Kimbap wrapping; and packaging the wraps in moisture-resistant packaging for extended shelf life.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032578 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED HYGIENE-OPTIMIZED SELF-CLEANING TOILET SYSTEM

(51) International classification	:G10L0015220000, E03D0009000000, H04W0088160000, C02F0001280000, H04L0067500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a self-cleaning toilet aimed at improving hygiene, maximizing the utilization of resources, and enhancing user convenience. This system uses real-time dirt and moisture sensors along with decision-making to trigger cleaning cycles only upon requirement, minimizing water and cleaning agent wastage. A multi-surface cleaning mechanism, features rotating brushes, mopping pads, and precision nozzles, thoroughly sanitizes the toilet bowl, seat, and surrounding surfaces. The system respects privacy through the use of non-intrusive sensors rather than cameras. The use of a water recycling and filtration system further reduces environmental footprint, with a predictive maintenance module for proactive system maintenance. The intelligent interface enables remote operation through a mobile app and voice control and provides a hassle-free, user-friendly experience. The invention provides a big improvement in making bathrooms cleaner, more efficient and environmental-friendly.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032579 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED IOT SYSTEM FOR PREDICTIVE MAINTENANCE AND SECURE MANAGEMENT OF COMPUTER LAB EQUIPMENT

(51) International classification	:H04L0009000000, H04L0009400000, H04L0009320000, G06Q0010200000, H04L0067120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-powered IoT system designed to optimize the management of computer labs in educational institutions. The system integrates IoT-enabled sensors, AI programming modules, and blockchain technology to provide real-time monitoring, predictive maintenance, and secure data handling. IoT sensors continuously measure critical parameters such as temperature, voltage, and current, while the AI component analyzes the data to detect anomalies, predict failures, and automate troubleshooting. A microcontroller processes sensor inputs and communicates via a WiFi controller to the cloud, where data is securely stored using blockchain for tamper-proof logging and transparency. Administrators access the system via a user-friendly interface, receiving alerts, diagnostics, and performance insights. The system's scalability and energy efficiency make it adaptable to diverse hardware setups, significantly reducing downtime and operational costs. This innovative solution enhances lab reliability, optimizes resource utilization, and ensures a secure, seamless learning environment for students and educators.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032430 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOLAR-POWERED ADAPTIVE SMART LIGHTING SYSTEM

(51) International classification	:H05B0047190000, H05B0047110000, H05B0047175000, H05B0045200000, H05B0047100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a solar-powered smart lighting system designed to provide adaptive and energy-efficient outdoor illumination through advanced environmental sensing and intelligent control mechanisms. The system comprises solar panels, an energy storage unit, a plurality of environmental sensors including ambient light, motion, weather, and traffic sensors, and a Central Control Unit (CCU) configured to process real-time data and dynamically adjust lighting parameters. The CCU incorporates adaptive energy optimization algorithms, a traffic-responsive lighting control module, and a predictive analytics module to enhance energy efficiency and operational performance. The system intelligently adjusts brightness based on pedestrian and vehicular movement, optimizes energy usage by forecasting environmental conditions, and integrates with IoT-based remote monitoring for efficient management.

No. of Pages : 30 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202511032431 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART SECURITY RING FOR PERSONAL SAFETY

(51) International classification :G06F0003010000, H04W0004800000, G06F0003044000, G08B0021040000, G08B0025010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses to a smart security ring device configured to provide real-time emergency response and user protection. The device comprises a ring body housing a processing unit that manages sensor inputs and executes emergency actions. A sensor suite includes a capacitive touch sensor for gesture-based activation, an accelerometer and gyroscope for detecting sudden movements or forced removal, a microphone and camera module for capturing incident data, and a heart rate sensor for detecting stress-induced anomalies. A GPS module provides real-time location tracking, while a communication module integrates Bluetooth, RF transmission, and Wi-Fi to transmit distress signals. A security response module includes a shock delivery unit that activates upon unauthorized removal, deterring attackers while triggering distress alerts. The device also features haptic feedback, LED indicators, and an optimized power module for extended battery life. The processing unit facilitates event classification and automated emergency response, ensuring seamless operation in network-restricted environments.

No. of Pages : 30 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032432 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE BIOSENSOR FOR DRUG DETECTION AND MONITORING

(51) International classification	:A61B0005000000, A61B0005145000, G01N0027327000, A61B0005110000, A61B0005024000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses to a wearable, non-invasive drug detection system using sweat-based electrochemical biosensors to enable real-time monitoring of substances like opioids, sympathomimetics, and/or alcohol through a sweat analysis. The device integrates stretchable electronics for skin contact and wireless data transmission. Electrochemical techniques ensure high sensitivity, while an onboard processing unit processes and transmits data via Bluetooth. Powered by ultracapacitors, the present invention provides efficient, long-lasting operation. Further, the present invention provides immediate alerts and remote monitoring, making it ideal for healthcare, rehabilitation, and forensic applications as a cost-effective alternative to traditional drug testing methods.

No. of Pages : 29 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202511032449 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ROBUST ADVERSARIAL NETWORK FOR ENHANCING COMPUTER VISION MODELS AGAINST PERTURBATIONS

(51) International classification :H04L0009400000, G06N0003080000, G06N0003045000, G06F0021570000, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Adversarial attacks pose a significant threat to deep learning-based computer vision models, potentially leading to incorrect predictions in safety-critical applications. This invention proposes a Robust Adversarial Network (RAN) designed to enhance model resilience against perturbations through a multi-faceted approach. The proposed framework integrates frequency-aware adversarial training, multi-scale feature alignment, and an adaptive defense mechanism to improve robustness while maintaining computational efficiency. By leveraging Fourier-based perturbation detection, dynamic model adaptation, and feature consistency at multiple abstraction levels, RAN effectively mitigates adversarial threats. Experimental evaluations demonstrate significant improvements in robustness against state-of-the-art attack methods while preserving model accuracy on clean data. This innovation provides a practical and efficient adversarial defense strategy, benefiting applications in autonomous systems, healthcare, and security.

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511032990 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WALL BLOCK COMPRISING SAW DUST

(51) International classification	:E04B0002020000, E04C0001400000, E02B0003120000, E04C0001390000, C08G0018420000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention relates to construction blocks composed of sawdust, cement, stone dust, grit, clay, and a waterproofing agent. These eco-friendly blocks exhibit high compressive strength modern construction, addressing environmental concerns while maintaining structural integrity and design versatility.and low water absorption, making them suitable for various structural applications. The construction block enhances durability, weather resistance, and erosion prevention, while the high thermal mass aids in temperature regulation, reducing reliance on artificial heating and cooling. The production method prioritizes sustainability by utilizing locally sourced materials and eliminating fired kilns, significantly reducing the carbon footprint. These blocks are applicable in residential and commercial construction, rural housing, and landscaping. Their cost-effectiveness, ease of production, and aesthetic adaptability make them an innovative and sustainable choice for

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511033026 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR OPTIMIZING 3D GEOMETRIC TRANSFORMATIONS IN COMPUTER GRAPHICS

(51) International classification :G06F0009500000, G06T0011000000, G06T0015000000, G06N0003045000, G06T0001200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
This invention introduces a system and method for optimizing 3D geometric transformations in computer graphics, enhancing computational efficiency and real-time performance. Traditional transformation methods rely on matrix multiplications for translation, rotation, scaling, and projection, which can become computationally expensive in applications like gaming, virtual reality (VR), and augmented reality (AR). The proposed system optimizes these transformations using advanced mathematical techniques, GPU-based parallel processing, and AI-driven predictive modeling. It employs matrix decomposition, quaternion-based rotation handling, and shader-based execution to minimize computational complexity. Additionally, AI-driven predictive optimization dynamically adjusts transformation sequences to eliminate redundant calculations, while adaptive load balancing efficiently distributes computations between CPU and GPU resources. By integrating memory-efficient transformation techniques, such as caching, compression, and optimized data structures, the system reduces memory bandwidth constraints, leading to improved rendering speeds and reduced processing overhead. Applicable across various industries, including gaming, CAD, robotics, and medical imaging, this system ensures high-speed, accurate, and scalable 3D rendering, significantly enhancing modern graphics applications.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202511033038 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD TO ASSIST IN ELECTRIC VEHICLE BATTERY CHARGING DURING MOTION

(51) International classification	:H02J0007000000, G08G0001000000, B60W0030160000, H04W0004460000, B60L0053660000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention relates to a system and method to assist in electric vehicle battery charging during motion. The method includes receiving sensor data from a plurality of sensors (104) located on a recipient vehicle (102) and analyse the sensor data based on recipient location and donor location to identify a vehicle charging parameters. The method also includes coupling a V2V connector between the donor vehicle (112) and the recipient vehicle (102). Further, the method involves monitoring the donor vehicle (108) and the recipient vehicle (102) based on the vehicle charging parameters using an Adaptive Cruise Control or Platooning function. The monitoring occurs after the charging process has been initiated. Furthermore, the method includes positioning the donor vehicle (108) and the recipient vehicle (102) according to the vehicle charging parameters and the sensor data using an Advanced Driver-Assistance System (ADAS) for vehicle-to-vehicle battery charging during motion. Fig. 1

No. of Pages : 29 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032580 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED WEARABLE EYE-TRACKING STRAP FOR VR AND SMARTPHONE CONTROL WITH MPU6050 AND BLUETOOTH

(51) International classification	:G06F0003010000, A61B0005000000, G06V0040180000, G06V0040190000, G02B0027000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a wearable device and system for real-time eye movement tracking, particularly for enhancing interaction with virtual reality (VR) systems and smartphones. The system includes multiple strategically placed cameras that capture images of the eye from different angles, including front, side, and top views. The captured images are processed using image processing algorithms to extract eye features such as pupil position and iris shape. Sensors, including MPU6050, measure eye orientation and acceleration, enabling accurate 3D reconstruction of eye movements through synchronized image analysis. A complementary filter integrates camera and sensor data for precise gaze estimation. The system wirelessly communicates gaze data to VR devices via Bluetooth for hands-free control. Additionally, a quality control application utilizes high-resolution cameras and sensors for defect detection in manufacturing. By combining multi-angle imaging, AI-driven analysis, and wireless connectivity, the invention provides a portable and efficient eye tracking solution for various applications.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032581 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COPPER-BASED METAL–ORGANIC FRAMEWORK (CU-MOF) WITH ANTIMICROBIAL PROPERTIES AND METHOD OF SYNTHESIS THEREOF

(51) International classification :A61P0031100000, A61P0031040000, A61P0039060000, B01J0031220000, C08L0067020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

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Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a novel copper metal-organic framework (Cu-MOF) synthesized using succinic acid and citric acid via a cost-effective solvothermal method. The synthesized Cu-MOF exhibits significant antimicrobial and antioxidant activities. Characterization techniques such as FT-IR, FE-SEM, EDX, powder XRD, and TGA confirm its structural and chemical properties. The Cu-MOF demonstrates antibacterial activity against Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, Bacillus subtilis, and Pseudomonas aeruginosa, as well as antifungal efficacy against Saccharomyces cerevisiae and Candida albicans. The antimicrobial activity is dose-dependent, with significant inhibition observed at concentrations of 50–200 mg/mL. Furthermore, the Cu-MOF exhibits substantial antioxidant potential, with a 72.33% DPPH free radical scavenging activity. The invention offers a promising alternative to conventional antimicrobial and antioxidant agents, with potential applications in pharmaceuticals, healthcare, and material sciences.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032583 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC GAS STOVE WITH SPILL DETECTION AND AUTO-CUTOFF SENSOR FOR SAFE COOKING

(51) International classification :F24C0003120000, F24C0015100000, C02F0101320000, F24C0003000000, F24C0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention introduces a gas stove with an advanced spill detection and automatic cut-off mechanism to enhance kitchen safety and convenience. The system automatically shuts off the gas supply upon detecting spills or unsafe temperatures, preventing hazards and wastage and equipped with sensors to monitor liquid spills and temperature levels. Audible and visual alerts notify users of incidents, while compatibility with existing gas stove models ensures ease of adoption. This innovation addresses long-standing safety concerns, reduces cooking-related accidents, and promotes energy efficiency by combining automation with traditional cooking methods. This technology sets a new standard for gas stoves, offering modern households a safer and smarter cooking experience.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033350 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR AIR DETOXIFICATION

(51) International classification	:F24F0011640000, H01M0004880000, F25J0003040000, H01M0004900000, A61P0039020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A System and Method for air detoxification comprising a base housing (200) with air inlet holes (201) and a raised circular structure (202) for holding a HEPA filter. A closed housing compartment (300) with a removable top lid (301) which is positioned above the base housing (200). The system includes three detachable air detoxifying cartridges (500), an air circulation means (401), sensors for air quality (405), humidity (402), temperature (403) and optical particles (404), along with a humidifier (406) and a rechargeable power source (407). The detoxification mechanism, i.e., the air detoxifying cartridges utilizes detoxifying balls of compositions A, B and C, consisting of various clays as base material, active materials like charcoal and camphor, and antimicrobial agents such as potassium permanganate, chitosan powder, silve_r nanoparticles, and essential oils. The system effectively removes VOCs, bacteria, fungi, and other pollutants, ensuring improved air quality.

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033410 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTI-CANCER COMPOSITION AND ITS METHOD OF PREPARATION

(51) International classification :A61P0035000000, A61K0036185000, C07H0019120000, A61P0001160000, G01N0033574000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides an anticancer composition in the form of hydro-ethanolic extract from the leaves of Teucrium royleanum. This invention method and composition for the treatment of hepatocellular carcinoma (HCC) with the help of phytochemical-rich compounds. The composition consists the compounds including Oxazole, 6-Azacytosine, Hydantoin, Trihydoxypyridine, and Benzoxazine for treating hepatocellular carcinoma (HCC) These compounds exhibit the potential for anticancer properties. The Invention further discloses a method of extracting and formulating the crude hydro-ethanolic extract to ensure optimal bioavailability and therapeutic efficacy. This invention offers a novel, plant-based therapeutic approach to liver cancer treatment, minimizing adverse effects commonly associated with conventional chemotherapy.

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033470 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR MONITORING SEA ICE FORMATIONS IN REAL-TIME

(51) International classification	:G06N0003080000, H04L0009400000, G06N0003045000, G06F0018250000, G06Q0050260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure relates to a system (102) and method (300) for monitoring sea ice formations in real-time. The system (102) is configured to monitor, classify, and analyse sea ice formations in real-time using satellite images. The system (102) integrates deep learning models to detect sea ice types, including first-year ice, multiyear ice, and ice ridges, while predicting their movement patterns. Further, the system (102) generates automatic alerts and recommendations for maritime navigation, aviation, and environmental monitoring. Equipped with a GPU unit (404), a cloud-based storage and retrieval unit (402), and an interface (206), the system (102) ensures fast data processing and seamless data sharing across multiple sectors. The system (102) helps prevent marine accidents, supports climate research, and safeguards marine biodiversity by estimating the approximate risk and impact of ice formations.

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033479 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PLANT HEALTH AND DISEASE DETECTION SYSTEM

(51) International classification :G01N0033240000, G06Q0050020000, B64C0039020000, A01G0025160000, A01G0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention relates to a Plant Health and Disease Detection System for real-time plant monitoring. The system includes a camera, a soil sensor, a temperature and humidity sensor, a system on chip module, and a mobile device. The camera includes high-resolution digital cameras, thermal cameras, and drones for aerial imaging to monitor plant health over large farm areas and a microscope is used for close-up imaging of microscopic plant features. The temperature and humidity sensor continuously monitor the plant's environmental conditions. The mobile device receives data from the system on chip module and provides real-time plant health feedback to the farmer, with visual and textual explanations for the system's predictions, including disease classification and environmental alerts. The storage device stores data receive from the camera, the soil sensor, and the temperature and humidity sensor and enables farmers to access historical data and trend analysis.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032519 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : "CURCUMIN-SULINDAC (CUR-SUL) CONJUGATE NANOPARTICLES AND THE METHOD FOR THEIR PREPARATION"

(51) International classification	:A61K0009510000, B01J0020280000, C08J0005180000, G01N0030900000, C07C0067080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a Curcumin-Sulindac (CUR-SUL) conjugate nanoparticles, comprising: i) curcumin in the range of 1…to…20mg… ii) Sulindac in the range of 1…to…20mg. The method for the preparation of said conjugate, comprises; A) preparation of Curcumin-Sulindac (CUR-SUL) conjugate: i) Adding an equimolar amount of DMAP to a solution of curcumin in a 7:3 mixture of dichloromethane and ethyl ether under a nitrogen (N2) atmosphere at room temperature (RT) and stirring for 30 minutes; ii) Introducing sulindac and EDAC to the reaction mixture and stirring for an additional 24 hours at RT under a nitrogen atmosphere; iii) Monitoring the reaction progress using thin-layer chromatography (TLC) with a 60% ethyl acetate and petroleum ether mixture as the eluent; iv) Extracting the organic phase using a separating funnel with ethyl acetate and water, followed by distillation to concentrate the crude product; v) Purifying the crude product via column chromatography using a petroleum ether and ethyl acetate gradient (10–60%) and silica gel (60–120 mesh) as the stationary phase; and vi) Collecting and drying the fraction containing the curcumin-sulindac conjugate to obtain a purified conjugate with an isolated yield of 60%; B) Preparation of CS-PAA nanoparticles, comprising: i) Preparing a 0.2% solution of polyacrylic acid (PAA) with a molecular weight of 100 kDa; ii) Preparing a 0.2% chitosan (CS) solution with a molecular weight of 80 kDa in a 1% (w/v) acetic acid solution; iii) Adding the PAA solution dropwise to the CS solution under continuous magnetic stirring at room temperature to form an opalescent mixture; iv) Centrifuging the mixture at 10,000 rpm for 45 minutes at 4°C to separate the nanoparticles; v) Washing the sedimented nanoparticles with distilled water and phosphate-buffered saline (PBS) to remove acetic acid; and vi) Lyophilizing the nanoparticles for storage and further characterization. Fig 1 to 9

No. of Pages : 30 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032542 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BISMUTH MODIFIED CALCIUM GERMANATE GLASS MATERIAL

(51) International classification :G01N0021358100, C03C0003253000, G02B0006120000, G01N0021358600, G02B0001080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a bismuth-modified calcium germanate glass system for terahertz waveguide applications. This glass material addresses the challenges of efficient waveguiding in the terahertz frequency range (0.1 to 10 THz) by offering improved thermal stability, mechanical strength, and optical properties. The incorporation of bismuth ions enhances the refractive index, density, and dielectric constant of the glass, making it suitable for advanced terahertz components such as waveguides and frequency selectors.

No. of Pages : 25 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032543 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOLAR CONCENTRATOR SYSTEM FOR ENHANCED SOLAR ENERGY ABSORPTION IN ALGAL SOLAR DISTILLATION FOR WATER PURIFICATION

(51) International classification :C02F0001040000, C02F0001140000, B01D0005000000, B01D0001000000, H01L0031054000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to solar concentrator system for enhanced solar energy absorption in algal solar distillation for water purification. The system integrates optical concentration techniques with algal-based bioremediation to improve thermal efficiency, accelerate evaporation rates, and enhance contaminant removal. It comprises a solar concentrator unit that captures and focuses sunlight onto a water distillation chamber, an algal purification chamber that aids in removing impurities and increasing solar absorption, a water evaporation chamber that facilitates phase transition, a condensation unit for converting purified vapor into liquid, and a collection reservoir for storing the purified water. By utilizing solar energy and the natural purification properties of algae, the system provides an energy-efficient, cost-effective, and sustainable solution for water purification. It is particularly suitable for off-grid and resource-constrained environments where access to clean water is limited.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202511033056 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A GROUNDWATER TREATMENT CARTRIDGE FOR HEAVY METALS AND METHOD THEREOF

(51) International classification :C02F0001000000, C02F0001280000, C02F0101200000, B01D0035300000, B01J0020200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a water filter cartridge which comprises combination of four components (Hard and soft shells of pistachio, biochar and biomass made out of it and limestone) is utilized for treatment process.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511033092 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DENTAL IMPLANT

(51) International classification :A61C8/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A dental implant (100) comprises a tapered body (102), active cutting elements (104), a concave apex (108), and flutes (110). The tapered body (102) comprises a threaded profile (102a). The active cutting elements (104) formed at a bottom apex region (106) cuts the host bone during insertion of the dental implant (100) to transfer host bone chips and fragments to a concave apex (108). The concave apex (108) is centrally positioned at the bottom apex region (106) to collect the host bone chips and fragments and simultaneously distribute an excess portion of the same to the flutes (110), as the dental implant (100) is inserted into the host bone. The flutes (110) extend along the tapered body (102) of the dental implant (100), where the flutes (110) are configured to collect the excess host bone chips and fragments that are being distributed by the concave apex (108) (Refer FIGS. 1A-1C).

No. of Pages : 42 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033165 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : NEUROPROTECTIVE POTENTIAL OF A POLYHEDRAL ANTIOXIDANT FORMULATION

(51) International classification :A61P0025280000, A61P0025000000, A61P0039060000, A61K0036810000, A61K0036480000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a novel polyherbal formulation (PHF) with potent neuroprotective and antioxidant properties, designed for the management of neurodegenerative disorders. The formulation comprises extracts of Withania somnifera, Emblica officinalis, Bacopa monnieri, and Mucuna pruriens, processed to ensure optimal phenolic and flavonoid content, contributing to its therapeutic efficacy. The PHF demonstrated significant antioxidant activity, with maximum free radical scavenging efficiency of 92.43% at 100 µg/ml concentration, surpassing standard ascorbic acid in lower concentrations. Additionally, phytochemical screening confirmed the presence of alkaloids, glycosides, tannins, flavonoids, amino acids, carbohydrates, and steroids, contributing to its neuroprotective potential. The formulation offers a promising natural approach for combating oxidative stress and preventing neuronal damage, providing a beneficial alternative for neuroprotection and the management of neurodegenerative conditions.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033166 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIPYRETIC ACTIVITY OF ETHANOLIC EXTRACT OF AMARANTHUS SPINOSUS STEM

(51) International classification :A61K0036210000, A61K0031196000, A61P0029000000, A61P0039000000, C11B0001100000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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6)Mr. Swatantr Bahadur Singh

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8)Mr. Anil Kumar

9)Mr. Dinesh Kumar

10)Mr. Munna Singh

11)Mr. Anesh Sagar

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(57) Abstract :
The present invention relates to an ethanolic extract of Amaranthus spinosus stem (EEAS) exhibiting antipyretic activity. The extract is prepared by defatting dried stem material with petroleum ether, followed by ethanol extraction using a Soxhlet apparatus, and drying with a rotatory vacuum evaporator. Antipyretic efficacy was evaluated in brewer's yeast-induced pyrexia models at dosages of 200 mg/kg and 400 mg/kg. Results demonstrated significant, dose-dependent temperature reduction over a four-hour period, with 400 mg/kg EEAS showing comparable efficacy to diclofenac sodium (10 mg/kg). Acute toxicity studies confirmed the safety of EEAS with no adverse effects observed over 14 days. This invention provides a natural, effective, and safe alternative to synthetic antipyretic drugs.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032600 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SOLID-STATE CARRIER BLOCK FOR ANAEROBIC BACTERIA AND A PROCESS THEREOF

(51) International classification :C12M0001000000, C02F0009000000, C02F0003280000, H01S0005343000, H01L0021677000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A solid-state carrier block for anaerobic bacteria and a process thereof is illustrated herein. The solid-state carrier block of the disclosed invention is a hybrid block, comprising activated Carbon (50% - 80% by weight), Zeolite (80% - 20% by weight), and a binding agent (0%- 5% by weight), with a porosity of 30%- 60% and moisture retention of 10%- 20% by weight. The activated carbon, selected from coconut shells, wood, or coal, provides a high surface area-800m2/g. The hybrid block maintains bacterial viability for up to 12 months at 4°C to 25°C. A method for its production involves dry mixing activated carbon and Zeolite, molding, pressing, and drying under anaerobic conditions. The block is impregnated with anaerobic bacteria in a liquid medium and sealed in oxygen-impermeable packaging for storage and transport. This carrier supports effective anaerobic bacteria viability without refrigeration.

No. of Pages : 20 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032610 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HAIR GROWTH AND ENHANCEMENT OIL FOR HEALTHIER, THICKER HAIR

(51) International classification	:A61K0008920000, A61K0009000000, A61K0008730000, A61Q0007000000, A61P0017140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a topical composition for hair regrowth, hair fall control, and the conversion of vellus hair into terminal hair. Specifically, the invention provides a blend of natural oils, vitamins, and essential oils that enhance hair health, thickness, and smoothness.

No. of Pages : 7 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032652 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RAPID RELIEF MAGNESIUM OIL SPRAY FOR MUSCLE & JOINT RECOVERY

(51) International classification	:A61P0029000000, A61P0019020000, A61K0009000000, A61K0036530000, A61K0009060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a topical pain relief composition, particularly a magnesium oil pain spray, designed to provide benefits such as sleep recovery, enhanced mobility, quick stiffness reduction, ease from soreness and pain, and muscle, ligament, and joint recovery. The formulation is based on a natural approach, integrating essential minerals and botanical extracts to support pain management and recovery without the need for synthetic analgesics.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032685 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : COLLABORATIVE LEARNING PLATFORM WITH REAL-TIME PROJECT MANAGEMENT TOOLS

(51) International classification :G06Q 50/00, G06Q 10/10, G06Q 50/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention provides a comprehensive solution to modern educational challenges by merging collaborative learning with efficient project management tools, fostering a more interactive, engaging, and outcome-driven educational experience

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032686 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE LEARNING SYSTEM WITH PREDICTIVE ANALYTICS FOR ACADEMIC AND ADMINISTRATIVE MANAGEMENT

(51) International classification :G06Q50/20, G06Q50/10
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed adaptive learning system with predictive analytics revolutionizes the way educational institutions manage academic and administrative processes. By integrating AI-driven insights with personalized learning, the invention ensures improved educational outcomes and institutional efficiency. The system is scalable, flexible, and can be deployed in various educational settings to meet the evolving demands of modern education

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032558 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-ENHANCED INTERACTIVE REALITY COMPETITION SYSTEM

(51) International classification	:A63F13/60, A63F13/45, A63F13/67, A63F13/79, A63F13/822, G06F16/332, G06F40/10, G06F40/30
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An AI-enhanced interactive reality competition system comprises a dynamic content generation module, a predictive analytics engine, an audience interaction platform, and a real-time challenge adaptation system. The dynamic content generation module employs a hybrid AI architecture to generate personalized content. The predictive analytics engine utilizes multi-modal data fusion to forecast player performance and audience engagement. The audience interaction platform facilitates real-time viewer participation. The real-time challenge adaptation system dynamically modifies challenge parameters. The system incorporates a distributed computing architecture and a robust security framework.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032566 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PLANT-BASED MEAT ANALOGUE KEBAB AND PREPARATION METHOD THEREOF

(51) International classification	:A23J0003220000, A23J0003140000, A23J0003260000, A22C0017000000, A23L0013400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a plant-based meat analogue kebab formulated using raw jackfruit pulp, red cowpea flour, and cocoyam flour, designed to replicate the taste, texture, and appearance of traditional meat while being entirely plant-derived. The invention also relates to a preparation method of the plant-based meat analogue kebab that comprises the steps of: boiling raw jackfruit pulp until softened; mixing the boiled jackfruit pulp with red cowpea flour, cocoyam flour, selected spices and salt; blending the mixture using a meat mincing machine or extruder to achieve a meat-like texture; shaping the blended mixture into kebab forms using a food wrapper or mold; steaming the shaped kebabs at 100°C for 20 minutes to ensure proper texture formation; and optionally frying the steamed kebabs at 175°C in mustard oil for enhanced crispiness and flavour.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032567 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ROTATIONAL PARKING MECHANISM FOR SPACE-CONSTRAINED AREAS IN RESIDENTIAL AND COMMERCIAL AREAS

(51) International classification	:E05B0047000000, G08G0001140000, H04W0004900000, G05D0001000000, B66F0017000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a rotational parking system that aims to maximize car parking in tight spaces. The system consists of a motorized turntable platform with 360-degree rotation, which does away with complicated maneuvering. It has a motorized drive system, a user-friendly control panel (with a mobile app for remote control), obstacle detection safety sensors, and an electromechanical locking system for stability. The system increases parking efficiency, saves space, and decreases driver effort. The system also includes energy-efficient elements such as solar power compatibility and low-power standby mode. The process of operation includes vehicle positioning, safety check, controlled rotation, and automatic locking to make parking smooth. The present invention is most useful in urban areas, residential garages, commercial parking lots, and emergency service centers.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032568 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED WATER LEVEL MONITORING AND CONTROL SYSTEM FOR WATER TANKS

(51) International classification :A01G0025160000, H04L0012280000, G05B0015020000, G05D0007060000, E03B0007070000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention pertains to an Automated Water Level Monitoring and Control System that is capable of preventing overflow of water and maximizing the usage of water. The system uses water level sensors, a control unit, an IoT module, and a shut-off mechanism. The sensors capture real-time levels of water in a storage tank and send information to the control unit, where the data are processed and controlled automatically by water inflow. The IoT module facilitates remote monitoring and manual override via a mobile app and web-based dashboard. The system sends real-time alerts for critical water levels and possible malfunctions. It accommodates integration with smart home automation and offers energy-efficient operation. Further, predictive analytics maximize water usage by analyzing patterns of consumption. The present invention promotes efficient water management, minimizes wastage, and maximizes convenience in residential, commercial, and industrial applications.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033198 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : APPLICATIONS IN CHEMICAL AND CATALYTIC SYSTEMS: EXAMINATION AND NUMERICAL RESOLUTION OF SINGULARLY PERTURBED PARTIAL DIFFERENTIAL EQUATIONS WITH INTEGRAL BOUNDARY CONDITIONS AND LARGE SPATIAL DELAYS

(51) International classification	:G06F0017130000, G06F0030230000, G06F0111100000, G06F0113080000, G06F0030280000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a method based on a hybrid numerical strategy to solve Singularly Perturbed Partial Differential Equations (SPPDEs) with integral boundary conditions and substantial spatial delays. The hybrid numerical strategy comprises Crank-Nicolson scheme for time discretization; a non-uniform Shishkin-type mesh to efficiently handle the boundary layers that arise from the small perturbation and delay parameters; and cubic spline interpolation in order to maximise accuracy in the neighbourhood of layers originating from the minuscule perturbation parameter and delay parameter. The method's effectiveness and resilience to integral boundary conditions and delayed feedback are confirmed by numerical testing. The efficiency of the suggested method is demonstrated through applications to transport-reaction dynamics in tubular reactors, catalytic reactions in porous media, and reaction-diffusion systems.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033211 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SCALABLE AI FRAMEWORK FOR ENHANCING SEARCH AND DISCOVERY INCLOUD-HOSTED ECOMMERCE MARKETPLACES

(51) International classification	:G06Q0030060100, G06F0016953500, G06F0009540000, G06F0016330000, G06F0016930000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides a scalable artificial intelligence (AI) framework for improving search, recommendation, and product discovery in cloud-hosted eCommerce marketplaces. The framework comprises a semantic indexing engine that processes structured and unstructured product data to generate deep vector representations, a natural language processing-based query understanding module for intent detection, a personalized recommendation engine using collaborative and content-based models, and a ranking module that reorders results based on real-time user behavior. Deployed as a set of cloud-native microservices, the system supports distributed processing, continuous learning from user interactions, and seamless integration with external platforms through APIs. The invention enables more accurate, personalized, and responsive shopping experiences across large-scale digital commerce environments.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033226 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR PREDICTING THE IMPACT OF POLLEN ON ALLERGY SEVERITY

(51) International classification :G06N0020000000, A61P0037080000, G06N0007010000, E21B0049000000, A61K0039360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a method for predicting the impact of pollen on allergy severity by integrating environmental, weather, and genetic factors. The method comprises receiving preprocessing input data, and including pollen types and counts, handling missing data, and applying a trained predictive model to make probabilistic inferences. The system processes these factors to generate a comprehensive prediction of allergy severity, providing an estimate of the combined effect of all contributing variables. Traditional predictive models demonstrate a connection between allergic reactions and pollen exposure; however, they are unable to significantly predict the severity of allergic reactions because of pollen, but in this model, with the use of Bayesian Networks to account for confounding variables, the relationship between pollen levels and the severity of allergy symptoms can be examined. This will help in building more personal predictions as well as management strategies for those who suffer because of such allergies.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032688 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NOVEL SUSPENSION SYSTEM WITH HINGED ARMS AND OPTIMIZED DAMPING RATIO FOR RURAL ROADS RIDE COMFORT

(51) International classification :B60G0017018000, B60G0017016500, B60G0017015000, B60G0017019000, B60W0030180000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an advanced modular suspension system (100) for vehicles operating on rural roads with uneven surfaces such as 4–5 inch deep potholes. The system comprises a vehicle chassis (10), a hinged arm mechanism (12), a spring element (14), a damper element (16), and optionally an active control element (18) such as a hydraulic actuator. The system further includes an Hydraulic control unit (20) for real-time adjustment of suspension dynamics based on road input and vehicle behavior. The system is designed to limit sprung-mass displacement to within 100–120 mm and maintain ride stability at speeds ranging from 25 km/h to 75 km/h. It features a modular configuration, allowing hybrid passive-active functionality for cost-effective performance tuning. Validation through bond graph modeling and simulation results demonstrate superior shock absorption, reduced body acceleration, and improved handling over conventional suspension systems.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032715 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI BASED BIOMETRIC DOOR

(51) International classification	:H04L0009400000, G06V0040160000, G06F0021320000, H04L0009320000, G06V0040400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The intelligent biometric access control system presents a revolutionary approach to secure entry management, incorporating multi-modal authentication protocols and adaptive recognition algorithms that enable enhanced identity verification, automated anomaly detection, and intelligent access regulation while maintaining operational integrity and comprehensive security framework implementation. [510] The comprehensive biometric door management architecture employs sophisticated facial recognition mechanisms and protective encryption protocols, utilizing depth-sensing imaging technology and synergistic verification frameworks to ensure optimal identity confirmation, enhanced security regulation, and superior access control while maintaining complete user privacy. [515] The integrated methodology combines advanced neural network processing with behavioral pattern recognition systems, leveraging encrypted biometric templates and adaptive authentication algorithms to optimize access reliability and unauthorized entry prevention for maximum facility protection and minimal security vulnerability exposure. [520] The novel access management mechanism features engineered multi-factor authentication procedures with specialized spoofing prevention protocols, enabling complex decision-making processes while ensuring verification accuracy and identity validation across multiple environmental conditions without compromising operational efficiency. [525] The adaptive recognition architecture incorporates strategic biometric data partitioning for enhanced security implementation and authentication efficiency, utilizing optimized machine learning models and continuous calibration mechanisms to ensure regulatory compliance while maintaining adaptability across diverse lighting and positional variations. [530] Implementation methodology emphasizes scalable deployment management and efficient operational control sequences, implementing rigorous performance verification measures and adaptive recognition algorithms to achieve superior authentication reliability, enhanced security optimization, and privacy confirmation while ensuring seamless user experience. [535] The system demonstrates exceptional resilience through comprehensive integration of liveness detection principles and behavioral analysis models, validating its adaptability and effectiveness across various security applications while maintaining consistent performance metrics and threat detection efficiency. [540] The developed framework enables secure and intuitive transformation of complex access control challenges into streamlined, user-friendly processes, providing significant advantages over conventional methods through reduced false rejection rates, enhanced unauthorized entry prevention, and improved operational efficacy while maintaining superior compliance with privacy regulations.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033227 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT DIABETES DIAGNOSIS MACHINE LEARNING-BASED PREDICTIVE MODEL FOR EARLY DETECTION

(51) International classification	:G16H0010600000, G16H0050300000, G06N0020000000, G16H0050200000, G16H0050700000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides a machine learning-based predictive model for the early detection of diabetes, addressing the global challenge of rising diabetes prevalence. Utilizing a dataset of 760 patient records with attributes such as glucose levels, BMI, and insulin, the system employs preprocessing techniques including data cleaning and feature scaling. Five classification models—Decision Tree, Logistic Regression, Support Vector Machine, Naïve Bayes, and Random Forest—are trained and evaluated, with the Random Forest achieving the highest accuracy of 0.85, precision of 0.86, recall of 0.84, and F1score of 0.85. Data visualization enhances interpretability, while the methodology supports scalability for future enhancements like deep learning integration. This invention offers a reliable, costeffective tool for healthcare providers to identify diabetes risk early, improving patient outcomes and reducing healthcare burdens through timely intervention and personalized care.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033246 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOLAR-POWERED ELECTRIC VEHICLES CHARGING SYSTEM UTILIZING VEHICLE -TO - GRID-ENABLED SMART TECHNOLOGY

(51) International classification :B60L53/51, B60L53/63, B60L53/64, B60L53/66, B60L55/00, H02J3/32, G05F1/67

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
This invention describes a smart solar-powered electric vehicle (EV) charging system integrated with Vehicle-to-Grid (V2G) functionality to optimize energy flow, support grid stability, and promote clean energy usage. The system uses a three-port bidirectional converter connecting photovoltaic (PV) arrays, EV batteries, and the utility grid through a centralized 750V DC link. The converter includes an interleaved boost converter for solar harvesting, a flyback converter for bidirectional EV interfacing, and a three-phase inverter for grid connection. Intelligent algorithms governed by model predictive control dynamically manage energy distribution based on real-time solar availability, EV usage patterns, and tariff structures. A mixed-integer linear programming approach ensures optimal scheduling across multiple EVs. Experimental validation on CHAdeMO and CCS-compliant EVs demonstrates a 96.4% peak efficiency. The solution supports solar-only, grid-assisted, and V2G operation modes, offering a scalable, high-efficiency charging infrastructure for sustainable transport and smart grid integration.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033248 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED FINANCIAL PRODUCT COMPLIANCE SYSTEM FOR BANKING ANDREGULATORY MANAGEMENT

(51) International classification	:G06Q0040020000, G06Q0040060000, H04L0009320000, G06Q0040120000, G06Q0040000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses an automated system for ensuring regulatory compliance of financial products offered by banks and financial institutions. The system comprises a regulatory rule engine that stores jurisdiction-specific compliance requirements, a financial product parser that extracts key attributes from product definitions, a compliance validation module that evaluates product features against applicable rules, and a machine learning module that detects anomalies and predicts potential non-compliance events. A centralized dashboard interface enables real-time monitoring, reporting, and auditability of compliance status. The system is designed to support continuous compliance throughout the financial product lifecycle and integrates with internal banking systems and external regulatory feeds. The invention improves regulatory adherence, reduces compliance risk, and enhances operational efficiency across diverse financial offerings.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033269 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SCENES TO TEXT CONVERSION AND PRONUNCIATION FOR VISUALLY IMPAIRED PERSON

(51) International classification	:G06N0003045000, G06N0003080000, G06N0003044000, G10L0013080000, G06V0010820000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
The present invention provides a system for converting visual scenes into descriptive text and speech to assist visually impaired individuals in real-time. Utilizing advanced deep learning techniques, including Convolutional Neural Networks (CNNs) for image feature extraction and Recurrent Neural Networks (RNNs) or Transformer-based models for text generation, the system processes images captured from diverse environments. Optical Character Recognition (OCR) extracts text, while image captioning generates contextual descriptions of objects, actions, and relationships. Preprocessed images from a comprehensive dataset are normalized and resized for model training, achieving high accuracy as measured by BLEU and ROUGE scores. The generated text is converted to natural-sounding speech via a neural text-to-speech (TTS) system, integrated into a user-friendly application. This invention enhances autonomy for visually impaired users by delivering real-time environmental awareness, with potential for future multilingual and audio feedback enhancements, advancing assistive technology accessibility.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202511033273 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR CONTROL OF TRACKED BATTERY ELECTRIC VEHICLES AND METHOD THEREOF

(51) International classification	:B60T0013740000, B60L0053100000, B60W0010200000, B60W0010060000, G06F0009500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
An integrated chassis control system (200) for tracked electric vehicles, comprising an e-Powertrain system (110 a-b), an electromechanical braking system (120 a-b), an energy storage system (130), a plurality of sensors (140, 112 a-b, 124 a-b, 132) and a central torque controller (150). The central torque controller (150) is configured to monitor a number of system parameters including, but not limited to, RPMs, voltages, currents, temperatures, accelerations, velocities, battery charge and system status; and is configured to estimate track-surface interaction parameters, and generates energy-optimized driving and braking torque commands for tracking reference maneuver requests and maintaining system response within vehicle-level performance envelope and desired user requirements. The e-Powertrain system (110 a-b) and the electromechanical braking system (120 a-b) cumulatively control vehicle level accelerations and minimize ESS power consumption based on torque commands generated by the central torque controller (150). Figure 3 and 5

No. of Pages : 33 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033295 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CRICKET PLAYERS VALUE ESTIMATION

(51) International classification :G06N0020000000, G06N0020200000, A63B0102200000, G06N0005010000, G06N0007010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a system and method for evaluating cricket player performance and predicting match outcomes using data-driven techniques. By leveraging historical match data, key performance indicators such as batting averages, strike rates, bowling economies, and fielding efficiencies are analyzed to quantify individual and team contributions. Machine learning models, including logistic regression, decision trees, and ensemble methods like Random Forest Classifier, are employed to predict match results based on player statistics, team dynamics, pitch conditions, weather, and opposition strengths. Exploratory data analysis identifies patterns and correlations, while feature engineering enhances predictive accuracy. The invention generates actionable insights for team selection, strategy optimization, and game planning, benefiting coaches, analysts, and fans. Experimental results demonstrate improved decision-making and engagement through interactive dashboards and predictive user interfaces. This framework transforms cricket analytics into a precise, data-driven practice, adaptable to various formats and leagues.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032716 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MASTER AND SLAVE CONFIGURATION OF A MULTIPLE-CELL BIPOLAR CAPACITIVE DEIONIZATION WATER PURIFICATION SYSTEM AND METHOD THEREOF

(51) International classification	:C02F0001469000, C02F0001461000, C02F0001000000, C25B0011020000, H02J0001140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
System of master and slave configuration of a multiple-cell bipolar capacitive deionization (CDI)water purification comprising: Two or more Bipolar CDI cells; Two or more electric power supply; Plurality of solenoid valves and non-return valves; Inlet water source; Citric acid source; Treated water outlet; Reject water outlet; wherein each power supply is connected to at least one bipolar CDI cell such that the polarity of the power supply shall determine whether the bipolar CDI cell(s) connected to it is/are in adsorption cycle, desorption cycle or cleaning cycle; and wherein at least one power supply is master power supply and others are slave power supply such that the polarity of the slave power supply are dependent on the polarity of the master power supply. To, The Controller of Patents, The Patent Office, New Delhi [Fig. 1]

No. of Pages : 27 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032732 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR WATER FILTER CHIMNEY FOR ENHANCED AIR AND WATER PURIFICATION

(51) International classification :C02F0001000000, C02F0009000000, C02F0001280000, B01D0053040000, F24F0008158000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein is a system for water filter chimney for enhanced air and water purification (100) comprises a chimney structure (102) configured to capture airborne pollutants, smoke, and particulate matter from an external environment. The system also includes a filtration unit (104) disposed within the chimney structure, comprising a series of filters including a pre-filter for coarse particles, an activated carbon filter for odor and chemical absorption, and a HEPA filter for fine particulate removal, a water collection unit (106) integrated with the chimney structure, wherein atmospheric moisture, condensate from smoke, or rainwater is directed into a filtration chamber comprising a sediment filter, activated carbon filter, and a membrane-based filtration unit for removing impurities, contaminants, and microbial pathogens. The system also includes an electrostatic precipitation mechanism (108) configured to ionize airborne pollutants and capture charged particles on oppositely charged collection plates to enhance air purification efficiency.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032787 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A CONTROLLABLE MIST SYSTEM FOR MICROPHONE AND A METHOD THEREOF

(51) International classification :A62C0099000000, H04R0019040000, B05B0007080000, F24F0006140000, H02M0003156000
(86) International Application No :NA
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
In an aspect of the present disclosure, a controllable mist system (100) for microphone and a method (200) thereof are disclosed. The system (100) includes a storage tank (102) that is connected to a receiver (106) of the microphone (150) and has a centrifugal pump (not shown) to trigger and provide controlled water supply from the storage tank (102) after a pre-defined time interval to a nozzle jet (104) to disperse water in the form of mist in controlled bursts. The system (100) provides a customized nozzle jet (104) to control various parameters for mist dispersal before dispersal of misting, during session of misting and post dispersal to provide periodic misting to fulfil hydration and environmental cooling required for the speaker while lecture. Figures 1A, 1B and 2

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032789 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INSTITUTE MANAGEMENT SYSTEM BASED ON RFID TECHNOLOGY AND METHOD THEREOF

(51) International classification	:G06Q0050200000, G06K0017000000, G06Q0010060000, G06Q0010063000, B01L0003000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The primary objective of the institute management system is to revolutionize campus management by seamlessly integrating technology based on radio frequency identification with a comprehensive software application and specialized hardware devices. The system is designed to automate and streamline various campus functions, including attendance tracking, payment processing, and leave management, thereby reducing manual effort, minimizing errors, and enhancing operational efficiency. [Illustrative Figure 1]

No. of Pages : 36 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032790 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NON-INVASIVE, MULTI-BIOMARKERBIOSENSOR DEVICE AND METHOD FOR REAL-TIME MONITORING OFMETABOLIC, ENDOCRINE, AND ONCOLOGICAL BIOMARKERS

(51) International classification	:G01N0027327000, G01N0033543000, G01N0033574000, B01L0003000000, A61B0005145000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides a non-invasive electrochemical biosensor designed for real-time, multi-biomarker detection in biological fluids such as sweat, saliva, and urine. It monitors glucose, cortisol, sodium, potassium, and cancer biomarkers with high specificity and sensitivity using advanced components, including a removable single-use nitrocellulose sampling patch, enzyme-functionalized conjugation pads, graphene microfluidic channels, and silver nanoparticle electrodes. [Illustrative Figure 1]

No. of Pages : 32 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032823 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED SUSTAINABLE HUMAN RESOURCE MANAGEMENT DEVICE WITH SPIRITUAL WELL-BEING INSIGHTS

(51) International classification	:G06Q0010063900, G06Q0010063100, G06Q0010105000, G06Q0010063700, G06Q0010067000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention describes a sustainability and workforce spiritual well-being into Human Resource Management (HRM). It features an eco-conscious design with renewable energy sources such as solar panels and kinetic energy harvesting, ensuring autonomous operation. The system leverages AI algorithms to analyze employee sentiments and engagement, providing real-time insights via a customizable dashboard. A core innovation, the "Spiritual Pulse" metric, evaluates alignment with organizational values and purpose. Personalized training and development recommendations enhance professional growth and fulfillment. Unlike conventional HRM systems focused on administrative efficiency, this device provides a holistic approach to employee well-being. By fostering a work environment that aligns with employees' aspirations while minimizing environmental impact, it empowers HR professionals to make data-driven, employee-centric decisions. The system enables organizations to address engagement challenges proactively, ensuring sustainability, enhanced workforce satisfaction, and improved operational effectiveness.

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032825 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ASSEMBLY FOR GENERATING ROTARY LINEAR RECIPROCATING MOTION AND A METHOD THEREOF

(51) International classification :F02B53/00, F01B9/02, F02B75/32, F16H21/16, F01C21/00, F01B9/00, F01L7/00, F01C 1/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An assembly (100) for generating rotary linear reciprocating motion is provided. The assembly includes an oval shaped cylindrical housing (105) with an internal space accommodating a rotating shaft (110), a rotating slider (115), and a sliding sheet (120). The rotating shaft divides the housing into a first and second chamber and follows a sinusoidal sliding path to alternately modulate volumes. An intake port (125), an exhaust port (130), and a spark plug port (135) within the housing regulate fluid flow during operation. The sliding sheet within the rotating slider provides a sealing interface, minimizing fluid leakage. The assembly operates through a continuous cycle of intake, compression, combustion, and exhaust, wherein the combustion expands the fluid, generating power that rotates the rotating slider and rotating shaft. FIG. 1

No. of Pages : 31 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202511032831 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR DIRECT CONVERSION OF SYNGAS TO HYDROGEN

(51) International classification :B01J0037030000, B01J0023000000, C01B0003500000, C01B0003340000, B01J0037000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a sustainable and cost-effective method for hydrogen gas production from syngas (CO + H2) using mixed metal oxides, specifically calcium oxide (CaO) and magnetic iron oxide (Fe3O4) used in an equal ratio. A method for producing hydrogen gas from syngas using mixed metal oxides, comprising the steps of: preparing calcium oxide (CaO) from waste eggshells via calcination; synthesizing magnetic iron oxide (Fe3O4) via co-precipitation and oxidation; introducing a mixture of CaO and Fe3O4 into a high-temperature stainless steel reactor equipped with a heating mantle and non-return valve (NRV) to allow unidirectional syngas flow; passing syngas through the oxide bed; facilitating redox reactions to generate hydrogen gas; and collecting and storing the produced hydrogen gas.

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032832 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART PEN WITH INTEGRATED HANDWRITING CONVERSION AND VOICE-TO-TEXT TRANSCRIPTION

(51) International classification	:G10L0015260000, G06F0003035400, G06F0003048830, G06V0030320000, G10L0015220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a smart pen that integrates handwriting conversion and voice-to-text transcription capabilities, enabling transformation of spoken words into handwritten text. The device comprises a microphone for capturing speech, Natural Language Processing (NLP) processor for speech recognition and conversion, and a motorized ink system for real-time text writing. It features a miniature 3D model-type 2D writing mechanism that replicates the user's handwriting style with precision. The smart pen is equipped with a gyroscope to detect motion, orientation and acceleration, ensuring accurate transcription and writing synchronization. A noise-cancellation filter enhances speech recognition accuracy, while a user-friendly interface allows customization of handwriting styles, voice input preferences and language settings. The invention further includes a data synchronization module for real-time connectivity with external devices, facilitating digital storage and analysis. The invention offers an efficient, portable and intuitive solution for digital note-taking, transcription and personalized writing applications across diverse fields.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032833 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SUSTAINABLE CUSTOMIZED FABRIC-BASED DRY WASHER

(51) International classification :D06F0058200000, D06F0058260000, D06F0058220000, D06F0058020000, C11D0003370000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a dry cleaner device designed for households and industries that require delicate fabric care, offering advanced solutions for handling sensitive materials like cashmere, wool, leather, and silk. It integrates innovative features such as a steam generator, closed-loop heat pump system, and automated lint removal, ensuring thorough cleaning while preserving fabric texture and preventing wear. The steam generator smooths wrinkles during drying, while the heat pump recirculates air, enhancing energy efficiency and preventing overheating. Its closed-loop air circulation system maintains efficient drying without expelling air, making it environmentally friendly. Additionally, the automatic lint removal system keeps airflow consistent, minimizing manual maintenance. These features make the dry cleaner ideal for luxury fabrics and garments requiring specialized care, offering a gentle, efficient, and user-friendly laundry solution. This advanced technology sets a new benchmark in fabric care, combining convenience with energy efficiency for both homes and commercial services.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032834 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTONOMOUS HEIGHT ADJUSTABLE BICYCLE WITH LEG PRINT METHOD FOR BALANCE DETECTION AND CONTROL

(51) International classification	:A61B0005000000, G06F0018241100, G06N0020100000, A61B0005110000, B23D0059000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an autonomous height-adjustable bicycle incorporating a leg print method for real-time balance detection and control. The system comprises a height adjustment mechanism and a tilt adjustment mechanism, each actuated by servo motors based on sensor input. Pressure sensors located on the pedals and seat generate a unique leg print profile to monitor the rider's stability. Additional motion and speed sensors provide data on tilt, acceleration and velocity. A control unit processes this data using a machine learning program, preferably a Support Vector Machine (SVM), to detect restlessness, slow movement or imbalance and dynamically adjust the bicycle's height and tilt accordingly. The system includes a user interface, feedback mechanisms, data logging and a fail-safe function for enhanced safety and usability. The invention enables improved rider stability, comfort and adaptability to varying terrains and conditions.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202511033501 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A STABLE SINGLE-UNIT NUTRACEUTICAL DOSAGE FORM

(51) International classification :A23L21/10, A23L29/20, A23L29/30, A23G3/34, A23L33/00, A23L33/15
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to nutraceutical formulation comprising single unit dosage form. More particularly, the present invention relates to the thermally stable single unit dosage form comprising compressed tablet in gummy base solution for administering nutritional supplements and a process for preparation thereof. In particular, the present invention relates to a gummy base solution comprising compressed tablet, wherein the compressed tablet is a chewable tablet.

No. of Pages : 40 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033523 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : OPTIMIZING RENEWABLE ENERGY MANAGEMENT THROUGH MACHINE LEARNING-BASED WIND POWER PREDICTION

(51) International classification :G06Q0050060000, H02J0003380000, G06Q0010040000, G06N0020000000, H02J0003000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention relates to the optimization of renewable energy management through machine learning-based wind power prediction. Accurate wind power generation forecasting is essential for improving grid efficiency and reliability as the demand for clean energy grows. To enhance short-term wind energy projections, we look at cutting-edge machine learning methods, such as hybrid deep learning models that incorporate meteorological data. By examining univariate time-series data and applying attention mechanisms, our strategy greatly boosts prediction accuracy compared to previous methods. The results show that improved forecasting enhances power system stability overall and makes it easier to allocate energy resources more effectively. The study lays the groundwork for more robust and sustainable energy management techniques by highlighting the significance of utilizing artificial intelligence in the renewable energy sectors. In the end, accurate wind power forecasting can promote the incorporation of renewable energy sources into current networks, aiding in the shift to a more environmentally friendly future. FIG.1

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033526 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BISMUTH FERRITE MICROSPHERES CATHODE BASED EFFICIENT AQUEOUS RECHARGEABLE ALUMINUM-ION BATTERY AND FABRICATION THEREOF

(51) International classification :C01G53/04, C08K3/10, C08K3/04, H01M4/48, H01M4/52, H01M4/62

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a stable rechargeable aluminum-ion battery having bismuth ferrite microspheres (103) coated graphitic sheet (102) electrode adapted as cathode integrated with an aluminum based anode (104) in compatible Al-based aqueous electrolyte (105) that powers loaded energy storage system circuitry based on voltage bias for configuring an ambient processable, reversible energy storage device having improved capacity retention at high current rate with minimized capacity fading. The invention also provides a method of fabrication of said rechargeable aluminum-ion battery involving synthesis of spherical bismuth ferrite particles for selectively coating onto graphitic sheet to prepare bismuth ferrite microspheres coated graphitic sheet as cathode for assembling with compatible aluminum-based electrolytic solution in presence of aluminum-based anode to develop the targeted aqueous aluminum-ion battery, capable of showing fast charge-discharge characteristics at the high current rate by producing specific capacity between 110-180 mAh g-1 at current densities of 1 to 5 A g-1, with outstanding capacity retention of 85-99 % along with Coulombic efficiency of 95-100 %. Figure 1A-C

No. of Pages : 45 No. of Claims : 13

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(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202511033532 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE LEARNING BASED CNC ORTHOPEDIC MACHINE

(51) International classification :G06N0020000000, G16H0050500000, A61F0005010000, B29L0031000000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a Machine Learning Based CNC Orthopedic Machine designed to automate the fabrication of customized orthopedic devices. The system integrates anatomical data acquisition through 3D scanning or imaging, machine learning-based design generation, and CNC-based precision manufacturing. Patient-specific anatomical data is processed by a pre-trained machine learning model to predict biomechanical requirements and generate an optimized design. The design is validated through simulation and fabricated by a CNC machine with real-time feedback control to adjust machining parameters dynamically. Post-processing steps, including polishing and sterilization, ensure medical-grade quality. The invention significantly reduces production time, enhances device fit and performance, and minimizes human error. The system is applicable for manufacturing prosthetics, orthotic braces, implants, and other orthopedic aids, enabling personalized and adaptive healthcare solutions.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033535 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR AUTOMATED ANALYSIS OF POLITICAL DISCOURSE FOR SENTIMENT AND BIAS DETECTION

(51) International classification	:G06F0016350000, G06N0020000000, G06F0040350000, G06Q0050000000, G06F0040300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :

The present invention discloses a system and method for automated analysis of political discourse for sentiment and bias detection. The system comprises a memory (102) for storing political discourse data and models, a processor (104) for applying natural language processing to detect sentiment and bias, a database (106) for storing results, a user interface (108) for presenting analysis, and a communication module (110) for data exchange. The method (200) involves receiving political discourse data via the communication module (110), processing the data using the processor (104), and presenting the results via the user interface (108). The invention allows structured detection of sentiment polarity and political bias classifications across various content sources, such as speeches, news articles, and social media. The system provides real-time and historical analysis with visualization and filtering features. (Fig.1)

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025

(21) Application No.202511033539 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART ULTRASONIC NAVIGATION STICK FOR THE VISUALLY IMPAIRED

(51) International classification :A61H0003060000, A45B0003000000, G08G0001160000, G01S0015930000, A45B0003040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
This invention presents an innovative assistive device designed to enhance the mobility, safety, and independence of individuals with visual impairments. This intelligent walking stick integrates multiple sensor-based technologies to detect obstacles, environmental hazards, and location status, providing real-time feedback to the user. At the core of the system are ultrasonic sensors that emit sound waves to detect nearby obstacles. When an object is detected within a predefined proximity, the data is transmitted to a microcontroller, which processes the information and activates a buzzer to alert the user of a potential collision. This early warning system enables users to navigate safely and avoid obstacles in their path. The stick also includes a water detection sensor that identifies the presence of water on the ground, triggering a separate alert signal to prevent slipping or walking into wet areas. Furthermore, it incorporates a light detection feature that senses ambient light levels and informs the user whether the environment is light or dark, which can aid in orientation and situational awareness. To assist users in locating the stick if misplaced, a wireless RF remote control is provided. Upon pressing the remote button, a buzzer on the stick is activated, allowing users to find it quickly and independently. This multifunctional device combines sensor technology and smart alert mechanisms in a lightweight and user-friendly design, offering a practical and reliable navigation aid for the visually impaired. It represents a significant advancement in assistive mobility tools, promoting autonomy and safety in everyday movement.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202511033540 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CLOUD-NATIVE DEBUGGING SYSTEM WITH INSTANT ROLLBACK, AUTOMATED ROOT CAUSE ANALYSIS, AND DEPLOYMENT FAILURE LOGGING

(51) International classification	:G06F0011070000, H04W0024040000, G06F0011340000, H04L0067100000, H04L0041063100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a cloud-native debugging system designed to enhance the reliability and resilience of distributed applications deployed in containerized environments. The system includes an instant rollback engine that automatically reverts applications to a previously stable state upon detecting deployment or runtime anomalies. An automated root cause analysis (ARCA) module leverages telemetry data and intelligent algorithms to identify and report the origin of failures. A deployment failure logging system captures logs, configurations, and runtime context for post-failure diagnostics. The system integrates seamlessly with CI/CD pipelines and orchestration platforms, providing real-time monitoring, reduced downtime, and improved fault recovery in cloud-native infrastructures.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033553 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED PREDICTIVE AUTO-SCALING SYSTEM FOR DYNAMIC CLOUDRESOURCE MANAGEMENT USING HISTORICAL TRAFFIC ANALYSIS

(51) International classification :G06N 20/00, H04L 47/70, G06F 9/50

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides an AI-based predictive auto-scaling system for dynamically managing cloud computing resources based on historical and real-time traffic analysis. The system includes a historical traffic analyzer that collects and processes workload metrics such as CPU usage, memory consumption, and network throughput. An AI prediction engine employs machine learning models to forecast future resource demands. Based on these forecasts, an auto-scaling orchestrator adjusts resource allocations in advance to ensure optimal performance and cost efficiency. A monitoring and feedback module tracks system behavior, validates prediction accuracy, and continuously refines the models. The invention enhances scalability, minimizes latency, and reduces operational costs by proactively managing cloud resources in distributed and containerized environments

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033554 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A TRANSLUCENT CONCRETE COMPOSITION AND A METHOD OF PRODUCING THEREOF

(51) International classification	:C04B0028020000, C04B0111000000, C04B0028040000, B28B0023000000, B28B0013020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A method (100) for producing a translucent concrete composition. The method (100) comprises mixing (102) a predefined amount of cementitious material and water to form a cementitious binder matrix. Further, incorporating (104) a sintered fly ash coarse aggregate and fine aggregate into the cementitious binder matrix. Further, positioning (106) a plurality of plastic optical fibers in a mold according to a predefined pattern. Further, pouring (108) the cementitious binder matrix into the mold while maintaining the position of the plastic optical fibers. Further, compacting (110) the poured mixture to remove air voids and ensure uniform distribution of fibers. Further, curing (112) the translucent concrete composition under controlled conditions. Further, arranging (114) the plurality of plastic optical fibers in a predefined pattern and positioned to facilitate light transmission through the translucent concrete composition.

No. of Pages : 22 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202511033581 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CURCUMIN-ENRICHED CHITOSAN FILMS FOR SURGICAL WOUND HEALING: A GREEN APPROACH

(51) International classification :A61K0031120000, C08J0005180000, C08L0005080000, A61K0009500000, A61K0009510000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract The present invention discloses an eco-friendly, biodegradable chitosan-based film enriched with curcumin, designed as a sustainable solution for surgical wound healing. Curcumin—a potent anti-inflammatory and antimicrobial phytochemical this innovation integrates chitosan, a biocompatible polymer derived from crustacean shells, with curcumin (95% purity) using a green synthesis approach that eliminates toxic solvents and energy-intensive processes. The film comprises chitosan (70–90 wt%), curcumin (5–20 wt%), glycerol (3–10 wt%) as a plasticizer, and genipin (1–5 wt%) as a non-toxic cross-linker, replacing harmful alternatives like glutaraldehyde. The fabrication method involves dissolving chitosan in 1% (v/v) acetic acid, homogenizing curcumin via ultrasonication (40 kHz, 30 minutes), incorporating glycerol and genipin, and solvent casting followed by air-drying at 40°C. This process ensures uniform curcumin dispersion and enhanced film stability. The resulting films exhibit superior mechanical properties, including tensile strength (20–40 MPa) and elongation (10–30%), alongside controlled curcumin release kinetics, achieving sustained therapeutic delivery over 72 hours. Antibacterial efficacy tests demonstrate >90% inhibition against pathogens such as Staphylococcus aureus and Escherichia coli, critical for preventing post-surgical infections. Furthermore, the films degrade by 80% within four weeks under physiological conditions (PBS,pH 7.4), aligning with eco-friendly principles. .

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033585 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED TRAFFIC MANAGEMENT SYSTEM WITH IOT INTEGRATION FOR SUSTAINABLE AND EFFICIENT URBAN MOBILITY IN SMART CITIES

(51) International classification	:H04L0067120000, G06N0020000000, G08G0001010000, H04W0004700000, H04W0004380000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention relates to the inefficiencies in urban mobility, pollution, and traffic congestion have all increased as a result of rapid urbanization. An intelligent and sustainable solution for smart cities is provided by an AI-based traffic management system connected to the Internet of Things (IoT). This system analyses traffic flow, forecasts congestion, and optimizes signal timings by utilizing real-time data from IoT-enabled sensors, cameras, and GPS devices. By dynamically modifying traffic patterns, cutting wait times, and lowering carbon emissions, machine learning algorithms improve decision-making. Furthermore, smooth communication for accident detection and emergency response is made possible by connected cars and smart infrastructure. By lowering energy use, boosting road safety, and improving the commuter experience, the combination of AI and IoT promotes sustainable urban transportation. FIG.1

No. of Pages : 12 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202511033597 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR NON-INVASIVE REAL-TIME MONITORING OF SEED STORAGE CONDITIONS USING VOLATILE ORGANIC COMPOUND PROFILING

(51) International classification	:G01N0030060000, G01N0030020000, G01N0033000000, G01N0033497000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a non-invasive, real-time system for monitoring seed storage conditions using volatile organic compound (VOC) profiling. The system integrates gas sensors or gas chromatography-mass spectrometry (GC-MS) to detect specific VOCs, such as aldehydes and ethanol, emitted by deteriorating seeds. By analyzing VOC signatures, the system assesses seed quality, predicts degradation trends, and enables proactive storage management. A machine learning-based predictive model refines deterioration forecasts, while an automated alert system notifies users of potential seed quality loss. The system further optimizes storage conditions by adjusting temperature, humidity, or ventilation based on detected VOC levels, ensuring enhanced seed viability and sustainability in post-harvest management. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033598 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INVENTION FOR A NOVEL DEEPFAKE DETECTION FRAMEWORK UTILIZING DEEP LEARNING TECHNOLOGIES

(51) International classification	:G06N0003045000, G06N0003080000, G06N0003044000, G06N0003047000, G06V0040160000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The rapid advancement of deepfake technology, powered by artificial intelligence (AI) and deep learning, has revolutionized multimedia content creation and manipulation. Deepfakes, which involve the synthesis of highly realistic yet fabricated images, videos, and audio, pose significant threats, including misinformation, identity theft, and the erosion of public trust in digital media. This invention explores state-of-the-art deep learning techniques employed for deepfake detection, including Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Long Short-Term Memory (LSTM) networks, Autoencoders, Variational Autoencoders (VAEs), and Generative Adversarial Networks (GANs). A novel deep learning-based detection approach is proposed, integrating a ResNeXt-based CNN for feature extraction and an LSTM-based RNN for sequential analysis. This method effectively distinguishes deepfake videos from real ones by analyzing spatial and temporal inconsistencies introduced during deepfake generation. The system is trained and evaluated using a diverse dataset comprising Face Forensics++, the Deepfake Detection Challenge dataset, and Celeb-D, ensuring robustness in real-world scenarios. The research also addresses key challenges in deepfake detection, including high computational costs, dataset diversity, and the continuous evolution of deepfake generation techniques. Future research directions are discussed, focusing on improving model efficiency, integrating multimodal detection approaches, and establishing ethical frameworks for responsible AI usage.

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202511033600 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ENVIRONMENTALLY TRIGGERED ENCAPSULATION SYSTEM FOR CONTROLLED RELEASE OF DORMANCY-BREAKING AGENTS

(51) International classification	:A61K0009200000, A01N0045000000, C05F0011080000, A61K0047600000, A01N0043120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a controlled-release system for dormancy-breaking agents, wherein gibberellic acid, nitrate, or similar stimulants are encapsulated within biodegradable nanocarriers or microcapsules. The encapsulation matrix is designed to release the active agents only under specific environmental conditions such as moisture, temperature, or pH changes, ensuring precise and time-controlled activation of seed germination. This technology enhances agricultural efficiency by optimizing germination rates, reducing chemical wastage, and promoting sustainable farming practices. The system can be applied directly to seeds or soil, enabling a targeted and environmentally responsive approach to dormancy breaking, thereby improving crop yield and resilience in variable climatic conditions. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202511033663 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : OPTIMIZING QUADRI-PARTITIONED NEUTROSOPHIC TRANSPORT ROUTES FOR MULTI-ATTRIBUTE DECISION-MAKING

(51) International classification	:G06Q0010040000, G06F0016245700, G06N0003043000, G05B0013040000, G06Q0010063100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
In real-life problem-solving, information often contains impurities such as incomplete or vague da-ta. To address this, fuzzy set (FS) theory was introduced, followed by the development of neutro-sophic set (NS) theory, an extension that manages uncertainty more broadly. Building on NS, the quadri-partitioned neutrosophic set (QNS) incorporates four independent variables—truth, contra-diction, ignorance, and falsity—to better handle data indeterminacy. While transportation problems (TPs) have long been crucial due to their impact on cost and time, no solutions have yet been de-veloped for TPs in a QNS environment. This work proposes a novel approach to the quadri-partitioned neutrosophic transportation problem (QNTP), where costs are fuzzy, but demand and supply are crisp. A new algorithm is introduced to determine a basic feasible solution and ensure optimality. To validate this approach, a real-life case involving three restaurants delivering meals to four offices based on cost, delivery time, quality, and price fluctuations is examined. Future re-search will extend this work to fully fuzzy transportation problems in QNS and other fuzzy envi-ronments.

No. of Pages : 29 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033724 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : EFFICIENT HIGH YIELD WATER FILTER

(51) International classification	:C02F0001000000, A61K0039000000, H01Q0001240000, C07K0016280000, A61P0029000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
People around the world are in need of pure filtered water. There are various methods of filtration like passing water through a porous cloth or other porous material. Some years back ceramic filters were introduced which are placed in an upper chamber and filled with water to be cleaned where as the filtered water is collected in the lower chamber. This filter works on gravity and hence the rate of filtration is low. The new designed efficient high yield water filter works both under pressure and gravity and gives much more yield than a normal gravity filter. It uses a small pressure pump to increase the pressure to accelerate the filtration process. The pressure pump works on electricity or an inverter and consumes very less energy. Due to this, the filter can be used in remote areas. The pressure pump has a pressure sensor which shuts it off when the pressure in the upper chamber exceeds the set limit and starts automatically as the pressure decreases due to outflow of water. The filter can be fabricated out of food grade transparent plastic or stainless steel material. It basically has two chambers placed concentric one over the other. The upper chamber is provided with a ceramic stick through which water passes under pressure. The chamber is airtight. There is an arrangement of filling this chamber with water. The pump increases the pressure of the chamber, thus forcing out high volumes of water through the ceramic filter. . Below the upper chamber, there is a similar food grade plastic or stainless steel chamber. It is used to receive the filtered water of the above chamber. For obtaining water from this lower chamber, a tap outlet is provided. Experimentation with this new designed filter has showed a yield of around 225 ML in one minute versus the same amount i.e. 225 ML in 35 minutes when a simple prior gravity filter is used. This data completely proves that the new designed efficient high yield Water Filter is a breakthrough in water treatment technology. The filtered water has been tested and found to be free from all impurities including bacteria.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032835 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADJUSTABLE EAR BUDS KNOBS

(51) International classification	:H04R0001100000, A45C0013100000, H04N0023540000, H04R0001020000, H04R0005033000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an adjustable earbud mechanism designed for enhanced user comfort, safety, and durability. The earbuds incorporate a ball-and-socket mechanism that allows users to easily adjust the position and angle of the silicon earbud tip for a customized fit. An adjustable gap provides flexibility, while a nut-tightening system secures the earbud in the desired position, preventing unintended movement during use. This innovative design resolves the discomfort and ear damage risks associated with traditional earbuds, which often lack adjustability. Additionally, the mechanism increases the lifespan of the earbuds by making them more adaptable and repairable. The invention is ideal for various ear shapes and sizes, offering a more secure and comfortable fit. Its components work seamlessly to deliver a versatile and long-lasting audio device for daily use.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032836 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN HAZARD DETECTION & VISUAL WARNING SYSTEM FOR MOUNTAINOUS TERRAIN

(51) International classification :H04W0004800000, G08G0001096700, H04W0004440000, E01F0007040000, G08G0001160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a MountainSafe AI system is an AI-driven hazard detection and warning solution designed for mountainous regions to enhance road safety. It uses machine learning programming modules to analyze real-time data from vibration, weather, and terrain sensors, enabling accurate hazard prediction for rockfalls, landslides, and road blockages. The system features a Bluetooth Mesh and Li-Fi-enabled visual alert mechanism, which connects a series of smart warning lights that turn off or change color when a hazard is detected, providing instant, network-independent alerts to travelers. Powered by solar panels and piezoelectric generators, it ensures self-sustaining operation without requiring grid power. Additionally, it integrates with V2I (Vehicle-to-Infrastructure) technology, delivering real-time hazard alerts to vehicle navigation systems. Unlike traditional methods, MountainSafe AI is cost-effective, scalable, and highly reliable, making it an ideal solution for improving safety in remote, high-risk terrains.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202511032854 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : COMPOSITION CONTAINING PORTULACA OLERACEA AERIAL PARTS EXTRACT FOR ANTI-UROLITHITIC POTENTIAL

(51) International classification :A61K36/47, A61P13/04, A61K9/51, A61P3/14, A61B5/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Purslane in English and Kulfa in Hindi are the names given to Portulaca oleracea L., a herbaceous succulent annual plant that thrives in warm climates. Composition of Portulaca oleracea L. aerial parts extract was prepared using a Soxhlet apparatus, and phytochemicals were determined, including quercetin, using HPTLC for qualitative and quantitative analysis. Flavonoids, alkaloids, polysaccharides, fatty acids, terpenoids, sterols, proteins, vitamins, and minerals are among the many substances it contains. It also possesses a variety of pharmacological characteristics. Portulaca oleracea extract's anti-urolithiasis activity was comparable to the standard cystone, making it crucial for evaluating prophylactic management against high urolithiasis recurrence rates. This research introduces molecular docking methods and their applications in drug discovery. In silico, the diuretic potential of herbs Quercetin was evaluated against TNF-alpha, responsible for kidney inflammation, and compared to Furosemide.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511033812 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT-BASED PRECISION AGRICULTURE PLATFORM FOR SOIL HEALTH MONITORING AND DYNAMIC NUTRIENT BALANCING

(51) International classification :A01B0079000000, G01N0033240000, G06Q0050020000, A61B0005000000, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed invention discloses an IoT-Based Precision Agriculture Platform designed for real-time soil health monitoring and dynamic nutrient balancing. The system integrates a network of smart soil sensors capable of measuring parameters such as moisture, pH, temperature, and nutrient concentrations, transmitting this data wirelessly to a centralized cloud platform. Using advanced artificial intelligence and machine learning algorithms, the platform analyzes soil data to provide customized, real-time recommendations for nutrient management, optimizing fertilizer use and improving crop yield while preserving soil health. It features predictive modeling for proactive soil management, seamless integration with automated irrigation systems, and energy-efficient sensor nodes powered by renewable energy sources. Data security is ensured through encryption and authentication protocols. The platform is accessible via user-friendly mobile and web applications and is scalable for small to large farming operations. By promoting sustainable farming practices, the invention addresses food security, environmental conservation, and climate resilience challenges in modern agriculture.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033819 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : CHANNEL CAPACITY OF DUAL-BRANCH MAXIMAL RATIO COMBINING UNDER WORST CASE OF FADING SCENARIO

(51) International classification	:H04B0007080000, H04L0001060000, H04L0001000000, H04W0052260000, H04B0007041300
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Channel Capacity of Dual-Branch Maximal Ratio Combining under worst case of Fading Scenario The invention provides the provide the worst-case fading scenario which can be represented by Nakagami-0.5 distribution, which is a special case of Nakagami- m fading distribution. Under Nakagami-0.5 fading distribution closed-form expressions have been derived for the average channel capacity using uncorrelated dual-branch maximal ratio combining (MRC). This channel capacity is evaluated under Optimum Power with Rate Adaptation (OPRA) and Truncated Channel Inversion with Fixed Rate transmission (TIFR) schemes. And Numerical results of the average channel capacity under OPRA and TIFR have been presented and compared. It has been observed that OPRA provides higher capacity than TIFR under worst case of fading.

No. of Pages : 25 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033825 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A DUAL-CHAMBER SOAP STORAGE CASE WITH INTEGRATED DRAINAGE MECHANISM FOR ENHANCED SOAP PRESERVATION

(51) International classification	:F25D0021140000, B01J0019000000, C11D0010040000, C12M0001000000, A61M0027000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention discloses a dual-chamber soap storage case comprising a top chamber (101) with drainage holes (102) for holding soap and a bottom chamber (103) for collecting drained water. The inner walls of the top chamber (101) include grooves (104) to hold detachable filters (105). A drainage outlet (106) in the bottom chamber (103) allows easy water removal. The chambers are connected via a locking mechanism (107), ensuring hygiene, reusability, and soap preservation through effective separation of soap and water.

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033852 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SECURE FULL-STACK CLOUD ARCHITECTURE FOR E-COMMERCE WITH INTEGRATED CYBERSECURITY AND SOFTWARE QUALITY OPTIMIZATION MECHANISMS

(51) International classification :H04L0009400000, G06F0011360000, G06F0021620000, G06F0021570000, G06F0011340000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention provides a secure full-stack cloud architecture for e-commerce platforms, integrating cybersecurity measures and software quality optimization across all architectural layers. The system includes a multi-layered structure comprising a secure front-end interface, a microservices-based application layer, encrypted cloud data storage, and a CI/CD DevOps pipeline with automated testing and vulnerability scanning. A cross-cutting security layer enforces zero-trust architecture, intrusion detection, and access control, while an intelligent software quality module ensures performance monitoring, code analysis, and efficient resource utilization. The architecture is designed for scalable, secure, and high-performance deployment in public, private, or hybrid cloud environments

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033925 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ANTI-POACHING SURVEILLANCE SYSTEM AND METHOD THEREOF

(51) International classification	:H04N0007180000, H04W0088060000, G08B0013196000, G06V0020520000, G16H0050200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The anti-poaching surveillance system (100) and method (300) thereof is disclosed. Further, the system (100) comprises a plurality of image capturing modules (102) mounted on unmanned aerial vehicles, a plurality of dome-shaped structures (104) with an upper section (106) and a lower section (108), and at least one processor (114). The upper section (106) integrates a plurality of audio sensor modules (110), a Global Positioning System (GPS) module (112), and a communication module (116) with an antenna (118) for signal transmission. The lower section (108) houses the at least one processor (114), which receives and analyses data via an artificial intelligence/machine learning (AI/ML) module (120) to detect threats and generate real-time alerts. A user interface (122) installed within a computing unit (124) to displays incident data, and a rechargeable battery (126) powering the system (100). <>

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511033926 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIMICROBIAL ACTIVITY OF TRICHODERMA FUSED ZINC AND IRON NANOPARTICLES AGAINST CHICKPEA WILT

(51) International classification :A01N59/16, A01N63/38, A01N25/10, C12R1/885, A61K33/38

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an antimicrobial nanoparticles-based composition effective against chickpea wilt comprising zinc oxide and Ferric chloride solution; and Trichoderma asperellum fungal cells. The present disclosure also provides the method of synthesizing Trichoderma fused iron and zinc nanoparticles. The method comprises isolating of Trichoderma species from soil samples, providing a bio-filtrate of Trichoderma asperellum fungal cells; and exposing the Trichoderma asperellum bio filtrate to a solution containing 1mM zinc oxide and ferric chloride under dark conditions and shaking for 70-80 hours, in which the fungal cells produce at least one enzyme or metabolite that reduces zinc and iron ions to zinc and iron nanoparticles.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034004 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ENERGY CONSERVATION SYSTEM FOR ELECTRICAL APPLIANCES AND A METHOD THEREOF

(51) International classification :G06Q0010063300, G06Q0010107000, G06F0018400000, H04N0007180000, D06F0034050000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A energy conservation system for electrical appliances and a method thereof, comprises an image capturing module for capturing images of an electrical appliance and nearby persons, a communication module to notify users via email, and a processor with executable instructions to perform image processing, detect the presence of individuals, and determine the status of the appliance using OpenCV and YOLO protocols, when the appliance is powered on and no person is detected, a notification is sent to the user to switch off the appliance, the system continues capturing frames to monitor the appliance status, ensuring energy efficiency by automatically turning off appliances that are left powered on without use.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202511034005 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : LITERATURE BASED CONVERSATIONAL STRESS MANAGEMENT SYSTEM

(51) International classification	:A61B0005160000, G06F0003010000, G06N0003080000, G06F0040300000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A literature based conversational stress management system, comprising a curated dataset of teachings from a literature, categorized according to emotional states and practical scenarios, an ML (machine learning) based query matching module trained on dataset, a memory for storing and encoding computer executable instructions that, when executed by the at least one processor is operative to collect a query from a user, analyse query to identify user's emotional state, classify query into a relevant query or a general query, search dataset by query matching module for the most relevant response to relevant query, generate a response by retrieving the most relevant teaching of literature in accordance with the emotional state of user and output response along with emotional state of user.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202511034006 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WASTE MANAGEMENT SYSTEM

(51) International classification :B65F0001140000, B65F0001160000, B65F0001000000, G06Q0010300000, B65F0001100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A waste management system, comprising a base 101 equipped with a waste collection bucket 102, specifically designed for installation on a vehicle that traverses to uniquely identifiable waste bins for waste collection, a sliding panel 103, enabling users to pour waste from the bin into the bucket 102 effortlessly, an artificial intelligence-based imaging unit 104 detects the presence of waste bins and users nearby, the bucket 102 is attached to the base 101 via a flipping arrangement 105, enabling the bucket 102 to be turned over and positioned to deposit waste onto a nearby conveyor belt 111, a telescopic gripper 110 articulately segregating waste into various types and placing them into designated chambers 112, a compactor 113 featuring a motorized screw element 114, compacting the received waste, a multi-section box 115 stores additives for decomposition and deodorizing waste, a translating plate 117 pushes out compacted waste.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202511034010 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SEMICONDUCTOR TESTING DEVICE

(51) International classification	:G01R0031280000, H01L0021660000, G01N0033000000, H01L0021020000, C23C0016500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A semiconductor testing device, comprising a hollow cuboidal-shaped body 101 installed with rectangular platform 102 disposed on base of body 101, the platform 102 is configured to securely hold a semiconductor sample, manually placed over platform 102 via a user, a sensor array configured with platform 102, to collect raw data on electrical and physical properties of semiconductor sample, a signal conditioning module configured with processing unit to process collected raw data received from sensor array, a plurality of modules recognizes patterns within processed collected data, thereby identifying key semiconductor properties, including distinguishing between intrinsic/extrinsic properties and P-type/N-type characteristics of semiconductor sample, the processing unit present results of semiconductor sample testing on a user-interface of commuting unit, the user-interface provides an easy-to-understand format for displaying detailed properties, classifications, and predictions of semiconductor sample.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034011 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PROTECTIVE BUMPER SYSTEM FOR CRASH MITIGATION

(51) International classification	:B60R0019180000, G06F0011070000, B60R0021000000, B60R0021010000, H04N0013000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A protective bumper system for crash mitigation, comprising a bumper body 101 mounted on front and / or rear portion of a vehicle, a sensor array is configured with body 101 to detect an impeding collision and asses severity of impact, a control unit associated with system and communicatively connected to sensor array for processing real-time data received from sensor array and determine an appropriate response based on severity and type of collision, an energy-absorbing arrangement operably connected to control unit, the energy-absorbing mechanism comprises of an inflatable member 201 embedded within body 101, configured to deploy upon receiving an activation signal from control unit to absorb impact energy, an elastic recovery unit integrated within bumper body 101, the elastic recovery unit comprises shape-memory materials that facilitate restoration of body 101 to its original form after minor impacts.

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034015 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A LIQUID METAL PRINTING SYSTEM

(51) International classification :B33Y0030000000, B33Y0050020000, F27B0017000000, B33Y0010000000, C22C0038020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
he present invention relates to a liquid metal printing system(100). The present invention includes a base structure (102), a furnace(110), a CNC assisted bed fixture (112), and a z axis leadscrew mechanism(122). The base structure(102) includes a horizontal plate(104), and a column (106). The furnace(110) includes a nozzle(108). The CNC assisted bed fixture(112) includes a x axis leadscrew mechanism (114), a y axis leadscrew mechanism (118), and a bed (120). The y axis leadscrew mechanism (118) is coupled to x axis leadscrew mechanism(114). The y axis leadscrew mechanism (118) moves forward and backward along x axis . The bed (120) is coupled to the y axis leadscrew mechanism (118). The bed (120) moves forward and backward along y axis in horizontal plane. The molten material is poured on the bed(120) through the nozzle(108). The CNC assisted bed fixture(112) is moved as per the design of the mechanical components to be manufactured.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034016 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WHEELCHAIR WITH FOOT LIFTING ASSISTANCE

(51) International classification	:A61G0005100000, A61G0005120000, D05B0029020000, A47C0007540000, A47K0017020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A wheelchair with foot lifting assistance comprising a frame 101 having a seat 102 and a backrest 103 for a seating of a user, and armrests 107 along laterals portions of frame 101 for resting of arms of user, a pair of front wheels 104 and a pair of rear wheels 105 mounted at a bottom portion of frame 101 for locomotion, a footrest 106 coupled with a bottom surface of frame 101 by means of a pair of rods 201 joined with bottom surface via pin joints 202, rod 201 is extendable in nature, an articulation mechanism coupled between each rod 201 and bottom surface, to impart a rotational motion to footrest 106, a roller belt conveyor 112 configured with footrest 106, for gliding user's feet onto footrest 106, a control panel 108 provided on an armrest 107, to enable user to provide input regarding positioning of feet.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202511034018 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MATHEMATICAL MODEL AND APPARATUS FOR PREDICTIVE ANALYTICS IN FINANCIAL RISK MANAGEMENT

(51) International classification	:G06Q0040030000, G06Q0040060000, G06Q0040000000, G06Q0040080000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a mathematical model and apparatus for predictive analytics in financial risk management, designed to identify, forecast, and mitigate various types of financial risks in real-time. The invention integrates conventional statistical techniques with advanced machine learning algorithms to provide a robust and dynamic framework capable of processing and interpreting vast and complex financial datasets. This enables early detection of risk factors and enhances the accuracy of financial forecasting models. The apparatus comprises a data acquisition and preprocessing module, a multilayered analytical engine, and a decision support interface. The data acquisition module collects and refines structured and unstructured financial data from diverse sources, including market data, financial reports, economic indicators, and real-time news feeds. The analytical engine employs algorithms such as regression analysis, ARIMA, Monte Carlo simulation, and adaptive learning models to compute risk metrics including Value-at-Risk (VaR), credit risk scores, and liquidity indices. The adaptive learning component ensures that the system remains current with evolving market conditions and financial behaviors. The user interface delivers actionable insights through real-time alerts, visual dashboards, and scenario simulations. It empowers users to make data-driven decisions, set risk thresholds, and implement proactive strategies for financial stability. With its ability to combine explainable AI, statistical rigor, and real-time intelligence, the invention offers a transformative approach to managing financial risk across banking, investment, insurance, and fintech sectors.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034049 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR REAL-TIME EXERCISE ASSESSMENT USING SMART WEARABLE DEVICE

(51) International classification :A61B0005000000, A61B0005110000, G16H0020300000, G06F0003010000, G06F0001160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention relates a System(100) for real-time exercise assessment using smart wearable device. The system(100) includes a wearable device(102), a portable computing device(114). The wearable device(102) is worn by a user on different parts of the user's body. The wearable device(102) includes a system on chip module(104), an inertial measurement unit sensor(106), a low energy network module(108), a battery(110), a switch(112). The inertial measurement unit sensor(106) sends user body's specific force, angular rate, and magnetic field surrounding the body to the portable computing device(114).The portable computing device(114) uses adaptive machine learning model to synchronize data from the wearable device(102) worn on different parts of the user's body and perform movement analysis, and then provides feedback to users, displaying key metrics and suggestions for improving exercise techniques and also provides personalized training recommendations based on user performance trends thus improving injury prevention metrics and user health.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202511032110 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHODS FOR UTILIZING BIOMASS FUEL COMPOSITION IN A BIOCOIL BOILER

(51) International classification	:B09B3/00, F23G5/04, C10L5/44, C10L5/48
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The primary goal in developing the bio coil boiler was to create a compact and integrated steam generation system with a capacity of less than 1 tonne per hour, designed to operate under non-IBR (Indian Boiler Regulations) terms and norms. This enables the user to install the boiler directly into their system without the need for any IBR certifications or approvals. Due to its compact and integrated design, the entire boiler system experiences minimal heat loss, which is efficiently converted into usable heat for steam generation. Any boiler exhibits enhanced performance upon supplying fuel with reduced particle size, assuming small particles gets combusted completely due to maximum surface area. The biofuel has been developed accordingly by reducing their particle size to ensure uninterrupted transportation inside boiler, completion of combustion and eliminate unburnt fuel. The biofuel have also been processed to eliminate any residual oil content and moisture content from it by suitable natural adsorption technique. As mentioned earlier, the physical characteristics of the developed biofuel, comprising a mix of 2-3 biomass mixed carefully according to the clients requirement, includes moisture content ranging between 5-8%, ash content between 1-3%, fixed carbon content between 17-20%, and volatile matter ranging between 70-75%, calorific value ranging between 4200-4500 kcal, and bulk density between 400-450 kg/m3. Consequently, this bio coil boiler can be considered a working example of an integrated, compact steam generation system, specifically designed to meet lower steam demands without the necessity for IBR clearances.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034147 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT LIFT SYSTEM WITH AUTOMATED PASSENGER DETECTION AND OPTIMIZED STOPPING MECHANISM

(51) International classification :G06F0003041000, G06Q0010047000, B66B0005020000, G06Q0010063100, G05B0013020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention introduces an intelligent lift system equipped with an automated passenger detection and optimized stopping mechanism to enhance efficiency and user experience. This invention integrates external proximity sensors (infrared, ultrasonic, or AI-based) near elevator doors to detect waiting passengers in real time. The system intelligently differentiates between actual passengers and passersby, ensuring the lift stops only when needed. The key features include non-invasive installation, real-time adaptive control, optimized scheduling, and energy-efficient operation. The system minimizes missed stops and idle travel, reducing passenger frustration and operational costs. Additionally, the technology is retrofittable into existing elevators, making it a cost-effective, smart urban mobility solution. This invention enhances passenger convenience, reduces power consumption, and extends elevator lifespan, contributing to a sustainable and intelligent transportation system.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034148 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE WING SYSTEM FOR DRONE LANDING AND TAKEOFF INSPIRED BY AVIAN FLIGHT

(51) International classification	:B64C0039020000, B64C0029000000, B64U0030200000, G05D0001000000, B64U0050190000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention relates to an adaptive wing system for drone landing and takeoff, inspired by avian flight mechanisms. The system features a morphing wing structure capable of dynamically adjusting its shape using smart actuation technologies such as shape-memory alloys, piezoelectric actuators, or micro-motorized linkages. An intelligent flight control system enables real-time adaptation based on environmental factors to enhance stability, maneuverability, and energy efficiency. The system is designed for various applications, including delivery drones, surveillance, and disaster response, where improved vertical takeoff and landing capabilities are essential.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202511034083 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EDUCATIONAL SYSTEM AND METHOD FOR INTEGRATING STUDENT LEARNING STYLES AND PROGRESS DATA INTO A CUSTOMIZABLE LEARNING PLATFORM

(51) International classification :G06Q0050200000, G09B0007000000, G09B0005060000, G09B0007040000, G09B0007020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention relates to an educational system and method for integrating student learning styles and progress data into a customizable learning platform. The platform dynamically adjusts educational content, teaching techniques, and assessment strategies based on the individual learning styles of students and their real-time academic progress. The system enables personalized learning pathways, helping students engage with educational materials in a manner suited to their cognitive preferences, enhancing overall educational outcomes.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034136 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTO REAL-TIME PAINT MAKER DEVICE

(51) International classification	:B01F0035880000, B01F0035710000, G01J0003460000, G06Q0030060100, B01F0101300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides an automated real-time paint-making device designed to generate customized colors instantly. The device includes a user interface for selecting color preferences, a pigment dispensing system for precise proportioning, a mixing chamber for uniform blending, and a control unit that regulates operations. An integrated optical color-matching system ensures that the final paint color matches user specifications, with real-time adjustments made as necessary. The system also incorporates machine learning algorithms to improve accuracy over time. The invention eliminates human error, reduces material wastage, and enhances efficiency in paint formulation for commercial and domestic applications.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034137 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BIO-ENZYME-BASED BIODEGRADABLE JEWELRY CLEANER FOR NON-TOXIC, ECO-FRIENDLY CLEANING OF PRECIOUS METALS & GEMSTONES

(51) International classification :C11D0003200000, A61K0008670000, C11D0003040000, C11D0001660000, C11D0003386000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a non-toxic, eco-friendly, enzyme-based jewelry cleaner that is biodegradable and efficiently cleanses dirt, oxidation, and organic residues without toxicity. The composition includes protease (2-4%) and lipase (2-4%) enzymes for oil and organic deposit breakdown, soapnut-derived saponins (2-3%) as a gentle surfactant, and an EDDS-based bio-based chelating agent (0.5-1%) for improved tarnish removal. Stabilizer mixture of glycerol (2-3%), ascorbic acid (0.3-0.5%), rosemary extract (0.3-0.5%), sorbic acid (0.3-0.5%), and vitamin E (0.3-0.5%) extends the product's shelf life to 24+ months. pH-balanced formula (6.5-7.5) guarantees the compatibility of gold, silver, platinum, and fragile gemstones. The procedure for preparation is ultrasonic homogenization, high-speed agitation, filtration, and quality testing. Biodegradable containers enclose the solution that provides a green, safe, and renewable substitute for classic ammonia-based jewel cleaning solutions.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034138 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED 3D MODEL-BASED OUTFIT MEASUREMENT AND RECOMMENDATION SYSTEM USING SMARTPHONE TECHNOLOGY

(51) International classification	:G06Q0030060100, G06N0020000000, G06F0011340000, G06F0113120000, A41H0003000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to a system and method for virtual try-on and size recommendation using artificial intelligence, computer vision, and physics-based garment simulation. The system records user body measurement by camera-based scanning, user input, or saved profiles to create accurate 3D body model. A garment simulation engine simulates fabric behavior for realistic clothing appearance with correct draping and layering effects. A recommendation module that utilizes AI interprets body dimensions, size charts of specific brands, and customer preferences to provide optimal-fitting garment size. Through user ratings, purchase behavior, and return patterns, the system learns automatically to improve recommendations. Adaptive learning algorithms adjust size forecasts based on changing bodies to provide long-term accuracy. By incorporating real-time rendering and machine learning-based corrections, the present invention makes online shopping more enjoyable, decreasing return rates and enhancing customer satisfaction which offers an easy, tailored, and highly precise virtual fitting platform for online clothing commerce

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034149 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTI-THEFT DEVICE WITH ENGINE IMMOBILIZATION AND DISASSEMBLY MECHANISM

(51) International classification	:H04L0009400000, H02J0009060000, G06F0021620000, G06F0021570000, G06F0021550000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an anti-theft device for vehicles is disclosed, incorporating a theft detection system configured to monitor vehicle parameters and detect unauthorized access attempts. The device features an engine immobilization mechanism that prevents vehicle operation upon detecting unauthorized access, along with an optional engine disassembly mechanism that secures critical engine components to prevent removal. The theft detection system integrates RFID-based authentication, GPS tracking, biometric sensors, and machine learning algorithms for advanced threat identification. A user-friendly control interface provides configuration settings, security alerts, and remote access through a secure mobile application or centralized control unit. The system includes encrypted communication protocols for cybersecurity resilience and a backup power source for uninterrupted functionality. Designed for compatibility with various vehicle models, the device offers a multi-layered security approach to prevent theft and unauthorized use.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034150 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : REAL-TIME LANGUAGE TRANSLATION HEADSET FOR MULTI-LANGUAGE EDUCATIONAL ENVIRONMENTS

(51) International classification	:G06F0040580000, G10L0015260000, G10L0013000000, G10L0015000000, G10L0013080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention introduces a real-time multilingual translation system designed to eliminate language barriers in diverse communication settings, such as classrooms, conferences, and corporate environments. The system captures spoken input in one language using a high-quality microphone with noise-cancelling capabilities. It then converts speech to text through advanced speech recognition and processes the text using a real-time translation engine, ensuring contextual accuracy. The translated text is converted back into speech using a natural-sounding text-to-speech (TTS) engine. The final audio output is delivered via individual headsets or classroom speakers, facilitating seamless communication. The system offers key features like automation, scalability to multiple languages and audiences, high contextual accuracy, and adaptability across various environments.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034151 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIBACTERIAL SCENTED PAPER AND METHOD OF PRODUCTION

(51) International classification :D21H0011140000, D21B0001320000, D21C0005020000, A01N0065440000, A01N0065220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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(57) Abstract :
The present invention relates to a novel approach to the production of antibacterial scented paper through the utilization of recycled waste paper and natural bioactive additives, including pineapple peel fiber, and essential oils. The process involves the pulping of waste paper, followed by the incorporation of pineapple peel fiber, which enhances fiber bonding. Citronella essential oil is integrated to impart a sustained fragrance and augment the antibacterial functionality. The pulp mixture is formed into sheets, dried under controlled conditions, and processed into finished paper products. The resultant paper is biodegradable, environmentally sustainable, and exhibits both functional and aesthetic qualities. This invention provides a significant advancement in eco-friendly paper manufacturing by reducing reliance on synthetic materials and offering applications in packaging, stationery, and hygiene products while addressing environmental sustainability challenges.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034139 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ENERGY HARVESTING SYSTEM FOR HIGH NOISE ENVIRONMENTS

(51) International classification :H04R0003000000, H04L0069329000, H02N0002180000, H04R0001400000, H02J0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
This invention is an energy harvesting system designed for noisy environments including theaters, concert halls, and public spaces. It uses a microphone array to capture sound waves from sources including music, speech, and background noise. These sound waves are turned into electrical signals, that are processed and analyzed in real-time to identify the best energy sources. The system then converts the sound energy into electrical power, which is stored in batteries and capacitors for later use, and distributed to connected devices. It is designed to work efficiently without affecting the quality of sound in the environment, providing clear and uninterrupted audio experiences. The harvested energy is used to power small devices including displays and electronic systems, reducing reliance on traditional electricity sources. This system is a sustainable, eco-friendly solution for energy needs in entertainment venues, public spaces, and even remote locations.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034140 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN SYSTEM FOR REAL-TIME THREAT DETECTION AND SAFETY MANAGEMENT IN OIL, GAS, AND CHEMICAL INDUSTRIES

(51) International classification	:G06Q0010063500, G06N0020000000, H04W0004900000, G08B0007060000, G06Q0050260000
(86) International Application No Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an innovative AI-based system for real-time threat detection and safety management in industrial settings, specifically in oil, gas, and chemical industries. The system combines various environmental sensors such as temperature, gas, pressure, humidity, and smoke detectors with AI-based anomaly detection algorithms for predictive hazard identification. A microprocessor-controlled unit handles real-time data and initiates automated safety actions, including alarms, emergency shutdowns, and alerts to responders. The system includes a cloud-based design for remote monitoring, data analysis, and compliance reporting. It integrates smoothly with installed industrial infrastructure, IoT devices, and emergency management systems to provide improved safety and operational efficiency. Geospatial tracking, predictive maintenance, and blockchain-based incident logging also offer strong risk management. Through proactive threat prevention, automated emergency action, and ongoing optimisation by AI, the invention greatly improves industrial safety, reducing downtime, risks of equipment failure, and environmental risks.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034141 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTIFUNCTIONAL WASHING BRUSH

(51) International classification :A46B0011060000, A46B0011000000, A46B0005000000, A47K0005120000, C11D0009260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention relates to a washing brush with an integrated soap and water dispensing system, designed to enhance cleaning efficiency, convenience, and precision. A washing brush with an integrated soap and water dispensing system, comprising: an ergonomically designed handle (101) housing a soap reservoir (102) and a water reservoir (103) or a pipe hose connection (104) connected to an external water source; a lever mechanism (105) to control the water flow through the pipe hose connection; a cleaning head with bristles (106) and multiple dispensing openings for controlled release of soap and water; a dispensing mechanism including a soap controller button (107) and spring mechanism (108) for soap control, allowing independent or simultaneous release of liquid soap; and multiple water ports (109) to supply water from reservoir to the cleaning head with bristles.

No. of Pages : 10 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034289 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN IMAGE ANALYSIS SYSTEM FOR AUTOMATED MEDICAL DIAGNOSIS AND PROGNOSTICS

(51) International classification	:G06N0003045000, G16H0030200000, G16H0050200000, G06T0007000000, G16H0030400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an AI-powered image analysis system for automated diagnosis of medical imaging, utilizing deep learning and advanced image processing techniques to enhance diagnostic accuracy and efficiency. The system comprises an image acquisition module, a preprocessing unit for image enhancement, an AI-based analysis engine employing convolutional neural networks (CNNs) and transformer-based architectures, a predictive analytics module for disease progression assessment, and a report generation unit for seamless integration with hospital systems. Additionally, it incorporates explainable AI (XAI) to provide visual interpretations of diagnostic findings, ensuring transparency and interpretability. The system supports multiple imaging modalities, including X-ray, MRI, CT, ultrasound, and PET scans, and is designed for real-time processing, telemedicine applications, and integration with Picture Archiving and Communication Systems (PACS) and Hospital Information Systems (HIS). This invention significantly improves medical imaging diagnostics by reducing interpretation time, enhancing early disease detection, and providing AI-assisted clinical decision support. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034300 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A COATED CEFUROXIME AXETIL FORMULATION AND THE METHOD FOR ITS PREPARATION THEREOF

(51) International classification :A61K0047120000, A61K0009200000, A61K0031546000, A61K0047380000, A61K0031222000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a coated Cefuroxime Axetil formulation, comprises: i) Cefuroxime axetil in the range of 120mg/5ml to 125 mg/5ml; ii) MCC(Microcrystalline cellulose) 145mg/5ml to 150mg/5ml; iii) Stearic acid in the range of 145mg/5ml to 150mg/5ml; iv) IPA (in the range of 2325 mg/5ml to 2625 mg/5ml; v) HPC (in the range of 7.0mg/5ml to 7.5mg/5ml; vi) Intragranular material in the range of 400mg/5ml to 461mg/5ml; vii) Sucrose in the range of 3000mg/5ml to 3295.76mg/5ml; viii) Sucralose in the range of 16.00mg/5ml to 16.66mg/5ml; ix) Xanthum gum in the range of 8mg/5ml to 10 mg/5ml; x) Sodium benzoate in the range of 8mg/5ml to 10 mg/5ml; xi) Aerosil in the range of 8mg/5ml to 10 mg/5ml; xii) Sodium Citrate in the range of 33mg/5ml to 33.33mg/5ml; xiii) Citric Acid in the range of 20mg/5ml to 25mg/5ml; xiv) Strawberry flavour in the range of 73mg/5ml to 75mg/5ml; xv) Bitter taste masker in the range of 55mg/5ml to 60mg/5ml; xvi) Colour erythrosine lake in the range of 0.6 mg/5ml to 0.75 mg/5ml; and xvii) Menthol in the range of 2mg/5ml to 2.5mg/5ml. Fig 1 to 8

No. of Pages : 29 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034337 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BIOACTIVE RESIN JEWELLERY: A NATURAL ALTERNATIVE USING HONEYBEE PROPOLIS

(51) International classification :A61K0035644000, A44C0027000000, A23L0021200000, C08L0075040000, A61K0008980000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention relates to the development of handmade jewellery, including bracelets, earrings, necklaces, pendants, keychains, and badges, crafted from a bioactive resin blend of natural honeybee propolis (Apis mellifera L.) and beeswax. Propolis, a resinous substance collected by honeybees from plant exudates and enzymatically modified by ß-glucosidase, is rich in polyphenols, flavonoids, terpenoids, and aromatic acids, exhibiting antibacterial, antiviral, antifungal, anti-inflammatory, and antioxidant properties. This invention utilizes propolis as a sustainable alternative to synthetic resins, which are predominantly petroleum-derived and non-biodegradable. The jewellery items are molded, artistically designed, and polished, providing an eco-friendly, aesthetically appealing, and skin-friendly alternative to conventional jewellery materials. Additionally, propolis replaces traditional lac resin in gold jewellery, functioning as a base filler to enhance structural integrity and secure gemstones. The physicochemical properties of propolis contribute to structural stability in jewellery applications through oxidative polymerization, resulting in a durable, lightweight, and visually appealing material. Its intrinsic antimicrobial properties inhibit microbial colonization, reducing the risk of skin irritation and allergic reactions commonly associated with synthetic materials. By integrating propolis into jewellery, this invention provides a biodegradable and sustainable alternative to existing materials while enhancing the commercial viability of beekeeping by expanding the economic applications of propolis. This innovation aligns with the growing global demand for bio-based, non-toxic, and multifunctional materials, merging traditional craftsmanship with modern advancements in material sustainability.

No. of Pages : 24 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034142 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ALERT SHIELD: REAL-TIME ALARM AND SECURITY MONITORING SYSTEM

(51) International classification :H04L0009400000, G05B0019042000, G08B0021040000, G08B0013196000, G06F0021570000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention, AlertShield, is an advanced security monitoring system integrating multi-sensor fusion, adaptive learning, and IoT-enabled remote control. It employs a Central Processing Unit (CPU) that processes data from motion, infrared, and audio sensors to detect threats in real time while minimizing false alarms. Adaptive learning enables the system to evolve, recognizing user habits and environmental changes. The multi-sensor array ensures reliable detection by cross-verifying data, reducing vulnerabilities from sensor failures or environmental interference. Users receive immediate mobile alerts categorized by threat severity, enhancing response efficiency. Remote access via a dedicated mobile application allows live monitoring, sensor adjustments, and customized alert zones. AlertShield continuously refines its accuracy by learning from user feedback and real-world scenarios, ensuring reliable security in dynamic environments. By combining AI-driven analysis, real-time alerts, and user personalization, this system provides an intelligent, efficient, and comprehensive security solution for homes and businesses

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034143 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED PAINT SYSTEM FOR REDUCTION OF OVERSPRAY AND SURFACE NAVIGATION

(51) International classification	:B05B0012120000, B05B0012000000, B05B0013040000, B05D0001020000, B05B0012080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An automated paint system designed to minimize overspray and enhance surface navigation is disclosed. The system comprises a robotic arm equipped with a spray nozzle assembly, multiple sensors, and an AI-driven central processing unit. Real-time sensor data enables dynamic path adjustment and adaptive spray control, optimizing paint application efficiency. The system incorporates an airflow monitoring module to regulate spray settings based on environmental conditions. A machine learning framework further refines painting accuracy over successive operations. The invention finds applications in industrial painting, automotive coating, and architectural surface treatment, providing a scalable and efficient solution for high-precision painting tasks.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034145 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED CROWD SAFETY AND OXYGEN MANAGEMENT SYSTEM

(51) International classification	:G01N0033000000, G06V0020520000, G08B0021020000, E05B0065100000, A61M0016000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to gas detection and distribution system designed for real-time monitoring, analysis, and control of gas levels in various environments. The system incorporates a gas sensor network for the detection of oxygen, carbon dioxide, and toxic gases and a central controller that interprets real-time information and dynamically controls gas flow. A motorized pipe cap system varies gas distribution according to ambient conditions to maximize safety. The system has a real-time alarm module, integration of emergency response, and a crowd density detection system to ensure safety in industrial, public, and event places. A stage panic device is also used to control oxygen in crowded spaces. The system allows for automated control of ventilation, detection of fire hazards, and emergency exit guidance. Through the use of AI-powered analytics and adaptive gas flow control, the invention guarantees effective gas distribution and reduces risks associated with gas exposure and depletion.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034152 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ELECTRONIC RAIL MOBILITY SYSTEM

(51) International classification	:H02M0001000000, E01C0001000000, B62D0031000000, B61B0015000000, B61B0013100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
The present invention introduces an Electronic Rail Mobility System designed to enhance transportation accessibility for elderly and disabled individuals in large public spaces. Operating on a dedicated rail system parallel to pedestrian pathways, it ensures a safe, congestion-free journey. The system features a multi-passenger Electronic Rail Chair 300 constructed with lightweight, durable materials, offering ergonomic seating, adjustable components, and a comprehensive user control system with smart call functionality and real-time tracking. The rail system incorporates modular tracks 104 adaptable to diverse urban environments, with elevated and ground-level configurations to optimize space utilization. Its electric propulsion system provides a smooth, eco-friendly ride, enhanced by autonomous navigation and safety mechanisms, including collision detection and emergency braking. Integrated with solar energy solutions and automated docking stations, the system promotes sustainability. Designed for scalability, it seamlessly integrates with existing public infrastructure, offering an inclusive, efficient, and environmentally conscious mobility solution for modern urban environments.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034155 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DRONE-BASED AERIAL MARINE DEBRIS DETECTION AND REMOVAL SYSTEM WITH ADAPTIVE TRAPPING MECHANISM

(51) International classification	:B64C0039020000, G06T0007800000, B64U0101300000, G05D0001000000, H04N0007180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure may include aerial Debris Removal Drone System. Embodiments may also include a marine debris removal drone system including an aerial drone equipped with optical cameras, infrared sensors, GPS modules, a vacuum mechanism, and a net mechanism, where the drone may be configured to detect, classify, and collect marine debris from a water surface. In some embodiments, the drone system of Claim 1. In some embodiments, the optical cameras may be calibrated using a Camera Calibration Algorithm to correct lens distortions and ensure accurate image capture of the water surface.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034156 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC TYPING WATCH SYSTEM FOR MOTION DETECTION AND ANALYSIS

(51) International classification	:A61B0005110000, G06F0003010000, H04B0007060000, A61B0005000000, G06F0003034600
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure may include automatic Typing Watch System. Embodiments may also include a wrist-worn device including a set of nano servo motors configured to adjust the positioning of a thread gate system. Embodiments may also include a roller nozzle mechanism for interaction with threads based on motor adjustments. Embodiments may also include motion sensors including accelerometers and gyroscopes to detect hand movements and gestures. Embodiments may also include a processing unit for analyzing sensor data to determine typing commands. Embodiments may also include a wireless communication module for transmitting typing inputs to a connected device. Embodiments may also include motion Detection the system of claim 1. In some embodiments, the motion sensors detect linear acceleration and angular velocity.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034157 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED IMAGE ANALYSIS AND PROFILING DEVICE FOR MEDICAL IMAGING

(51) International classification	:G06T0007000000, A61B0005000000, A61B0001000000, G06T0011000000, G16H0040670000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a medical imaging device designed to capture high-resolution images of anatomical structures. The device includes an optical sensor that captures detailed images, which are processed by a pre-processing module to standardize the data, applying noise reduction and contrast adjustment algorithms. A feature extraction module utilizes edge detection and pattern recognition techniques to identify key features within the images. The device incorporates a Natural Language Processing (NLP) embedded connector that analyzes and categorizes anatomical structures based on the extracted features. The optical sensor captures images across multiple wavelengths, including visible and infrared light, enhancing image clarity and detail. The device also includes a calibration system that adjusts sensor alignment and colour settings using a lens alignment and colour calibration algorithm, ensuring optimal image quality. These features enable the device to provide precise and accurate medical imaging for diagnostic and analytical purposes.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034158 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MOTION-TRACKING NOZZLE SYSTEM FOR PRECISION FLUID DISPENSING

(51) International classification	:G05D0001000000, F41G0011000000, G06T0007200000, G01S0013860000, G06F0011340000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a tracking nozzle system designed to enhance firearm targeting accuracy by autonomously tracking moving objects and dynamically adjusting the firearm's orientation. The system comprises an optical sensor array for real-time target detection, a control unit integrated with AI-driven algorithms for motion prediction, and a motorized nozzle assembly for precise alignment. A feedback loop mechanism ensures continuous realignment, correcting trajectory deviations in real time. Additional features include a user interface for manual adjustments, a vibration damping mechanism to minimize disturbances, a fail-safe mechanism to secure positioning during system faults, and a data logging module for performance analysis. The system employs advanced object detection, predictive modelling, and real-time feedback mechanisms to maintain precise targeting in dynamic environments. By integrating intelligent tracking capabilities, the invention improves targeting efficiency, minimizes human intervention, and enhances firearm accuracy across diverse operational conditions, including low-light scenarios and high-motion engagements.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034159 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : CLASSROOM MONITORING AND PENALTY SYSTEM FOR DISCOURAGING DISTRACTIONS AND DISRUPTIONS

(51) International classification	:G06F0003010000, A61B0005000000, A61B0005398000, H04N0007180000, G08B0013196000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure may include a Classroom Monitoring and Penalty System including EOG sensor patches for tracking eye movements and gestures. Embodiments may also include audio sensors for detecting unauthorized talking. Embodiments may also include visual sensors for monitoring mobile phone usage and other visual distractions. Embodiments may also include a processing unit configured to analyze data from the sensors and apply penalty rules.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034160 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED DETECTION DEVICE FOR IDENTIFYING MOVING OBJECTS ON WIRED CONNECTIONS USING AI

(51) International classification	:G06F0003048830, G06F0003010000, A61B0005110000, G06F0003048800, G06F0003041000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a wearable garment embedded with a criss-cross wire layout designed to detect touch and movement. The wire layout covers key areas of the garment where interaction is anticipated. Touch sensors positioned at the intersections of the wire segments detect touch points, while strain gauges or piezoelectric sensors integrated along the wire segments measure movement, deformation, or stress. A microprocessor unit (MPU) processes sensor data, enabling real-time monitoring and response. The system includes a communication module for transmitting data wirelessly to a control interface, which provides users with a visual representation of detected touch and movement patterns. Users can configure sensitivity thresholds and customize detection settings. The garment can support various applications, including interactive clothing, assistive technology, and motion analysis. The integration of smart sensing technology within fabric enhances user experience, offering new possibilities for wearable electronics and human-computer interaction.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034161 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GARMENT FIT SYSTEM WITH REAL-TIME ADJUSTMENT AND FEEDBACK MECHANISM

(51) International classification	:A61B0005107000, G01S0017420000, B21B0038020000, G06Q0050020000, A41D0001000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a smart garment fit optimization system that dynamically adjusts garment dimensions in real-time to ensure an optimal fit. The system integrates optical sensors, LIDAR technology, a motorized adjustment mechanism, and a data processing unit to continuously monitor and modify fabric tension. The optical sensors and LIDAR capture high-resolution 3D data of the garment's surface, while the data processing unit analyses fabric deformation and tension distribution. A fit optimization algorithm evaluates these parameters against predefined fitting criteria, enabling precise garment adjustments through motorized actuators. The system provides real-time feedback via a visual interface and tactile cues, allowing users to customize fitting preferences. Additionally, an automated calibration process ensures adaptability to different fabric types and environmental conditions. This invention finds applications in fashion retail, sportswear, medical wearables, and custom tailoring, enhancing comfort, flexibility, and aesthetic appeal through intelligent garment fitting.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034356 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A VISION-BASED DRONE SYSTEM AND METHOD FOR OPTIMIZING POLLINATION IN A FLOWER

(51) International classification :B64C39/02, A01H1/02, B64D1/18
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention presents a vision-based drone system (10) and a method for optimizing pollination in flowers. The invention integrates advanced technologies, including autonomous drone (100) navigation, GPS-enabled field mapping using a GPS module (105) and obstacle detection module (115), an AI-powered image recognition module (125), a pollen dispersing device (130), a vibrating module (135), real-time data analytics (140), and feedback (145), modules to provide a scalable, efficient, and precise pollination system. The system is developed and implemented to optimize pollination in large-scale agricultural lands, including horticultural fields, while reducing resource wastage, labor costs, and environmental impact. Representative Figure 1

No. of Pages : 30 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034359 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN DYNAMIC PRICING AND PERSONALIZATION SYSTEM FOR CARRENTALS BASED ON REAL-TIME ENVIRONMENTAL AND USER BEHAVIORALDATA

(51) International classification :G06Q 30/00, G06Q 30/0645, G06Q 50/40

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an AI-driven system and method for dynamic pricing and personalized service delivery in car rental platforms. The system integrates real-time environmental data—such as weather conditions, traffic flow, and local events—with user behavioral data, including rental history, preferences, and usage patterns. An AI-based analytics engine comprising demand forecasting, user segmentation, and dynamic pricing models processes this data to calculate optimized rental prices and generate personalized recommendations. A personalization engine delivers user-specific offers, vehicle suggestions, and service customizations via a user interface in real time. The system enhances fleet utilization, maximizes revenue, and improves customer satisfaction by continuously adapting to changes in environmental and behavioral factors

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034434 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIBACTERIAL AND ANTIFUNGAL ACTIVITIES OF HYDYROALCOHOLIC EXTRACT STEM OF BASELLA ALBA

(51) International classification :A61K0036185000, A61P0031100000, A61Q0017000000, A01N0065080000, A61K0047320000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to the antimicrobial potential of the hydroalcoholic extract of Basella alba stem. Fresh stems were shade-dried, coarsely powdered, and extracted using a Soxhlet apparatus with an ethanol-water solvent system, yielding 8.2% w/w extract. The extract was evaluated for antibacterial activity against Escherichia coli and Bacillus subtilis, and antifungal activity against Candida albicans and Aspergillus niger using the disc diffusion method. Results revealed a concentration-dependent increase in zones of inhibition for all tested microbes, with significant activity observed from 250 µg/disk onwards. The extract exhibited maximum antibacterial activity against E. coli and potent antifungal effects at 1000 µg/disk. These findings indicate that Basella alba stem extract possesses promising broad-spectrum antimicrobial properties, supporting its potential application in herbal therapeutic formulations.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034435 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIDIABETIC POTENTIAL OF CINNAMOMUM VERUM AND ITS PHYTOCHEMICALS WITH MECHANISMS OF ACTION

(51) International classification :A61P0003100000, A61K0036540000, A23L0033105000, A61K0009480000, G01N0033500000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates an antidiabetic formulation comprising Cinnamomum verum extract standardized to contain cinnamaldehyde (15% w/w), eugenol (7% w/w), and polyphenols (12% w/w). The formulation is prepared through hydroalcoholic extraction at 60°C, followed by homogenization with excipients and drying to obtain a stable powder. It exhibits multi-targeted mechanisms including enhancement of insulin sensitivity, promotion of glucose uptake, inhibition of a-amylase and a-glucosidase enzymes, and antioxidant activity. Evaluation studies demonstrate potent antioxidant activity (IC50: 45 µg/mL), a-amylase inhibition (IC50: 32 µg/mL), and a-glucosidase inhibition (IC50: 28 µg/mL), along with a 48% increase in glucose uptake by L6 myotubes. The formulation is suitable for oral administration in the form of capsules, tablets, or sachets, providing a natural, effective, and safe alternative for diabetes management.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034162 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART INSULIN DELIVERY DEVICE

(51) International classification	:A61B0005000000, A61B0005145000, G16H0020170000, G16H0040630000, A61M0005172000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This present invention relates to a smart insulin delivery device designed to enhance diabetes management through real-time glucose monitoring and precise insulin administration. The device includes a pump system configured to create a vacuum in the injection port area, improving needle insertion efficiency. An optical sensor measures real-time glucose levels using infrared or near-infrared light, enabling non-invasive monitoring. A pressure sensor detects skin contact, ensuring proper device alignment before injection. The device further incorporates an algorithm that calculates insulin dosage based on real-time glucose readings, historical data, user-specific insulin sensitivity, food intake, and physical activity levels. An injection mechanism then administers insulin based on the calculated dosage. Additionally, the system may feature a closed-loop control mechanism for continuous insulin adjustment, a mobile application for remote monitoring, and a data logging module for tracking glucose levels and insulin administration. These features collectively improve accuracy, user comfort, and overall diabetes management.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034164 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN VIRTUAL GUIDED PROCEDURE CORRECTION SYSTEM UTILIZING PAST PROCEDURE DETECTION AND CLOUD CONNECTIVITY

(51) International classification	:A61B0034200000, G09B0019000000, G09B0009000000, G09B0005020000, G06F0003010000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention provides a VR-based AI-driven procedural correction system that detects errors in real-time and provides instant corrective feedback. The system includes a ring-ray signal emitter, motion-tracking sensors, and an AI-powered analysis unit to monitor procedural execution. A feedback mechanism delivers real-time guidance through visual, auditory, and haptic cues. The system incorporates adaptive learning for personalized training and cloud-based storage for long-term performance tracking. Designed for precision-driven fields such as medicine and engineering, this system enhances procedural accuracy and training efficiency.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034165 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED CONVEYOR SYSTEM WITH MULTI-DIRECTIONAL CONVEYOR BELTS

(51) International classification	:G05B0019042000, G05B0019418000, G06N0020000000, B65G0043080000, G05B0019048000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention introduces an advanced automated conveyor system designed for industrial material handling, featuring omnidirectional rollers, intelligent control mechanisms, and real-time adaptability. The system incorporates multidirectional conveyor belts, automated sorting, predictive maintenance, and energy-efficient components to enhance operational efficiency. Using advanced sensors, the system dynamically adjusts material movement, optimizing workflow and reducing downtime. The smart control module ensures real-time decision-making, while scalability and modularity allow seamless integration into existing infrastructures. Safety features such as collision detection and emergency stops enhance workplace security. This highly flexible and intelligent conveyor system offers a cutting-edge solution for modern industrial environments.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034166 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI-FUNCTIONAL HEMOSTATIC AND TISSUE FILLER DEVICE

(51) International classification :G06F0003010000, B60W0050160000, A61L0024000000, G01N0021640000, G07F0007080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention aims to enhance automotive safety and surgical precision by integrating advanced sensor systems for real-time environmental detection and precise, adaptive responses. The present invention relates to a portable, real-time wound management device, designed to calculate and deliver hemostatic treatment during surgeries. It offers immediate feedback through a visual display and haptic responses via a vibration sensor.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034436 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SV- APPLIANCE: AN INNOVATIVE APPLIANCE IN SPACE MANAGEMENT

(51) International classification :A61C0007000000, A61C0007080000, A61C0007100000, A61C0007120000, A61K0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a fixed orthodontic appliance, referred to as the SV Appliance, designed to regain and maintain space in the mandibular arch following premature loss of primary teeth. The appliance comprises a stainless steel lingual archwire contoured to the dental arch, a U-clasp for anchorage, and a nickel-titanium (NiTi) open coil spring that delivers a consistent distalizing force to reposition the first permanent molar. A lingual sheath is welded onto a molar band to support guided insertion and stabilization of the archwire. The SV Appliance ensures controlled tooth movement, maintains space on the contralateral side, and supports proper eruption of succedaneous teeth. It is custom-fabricated on a dental cast and cemented intraorally, offering enhanced patient compliance, oral comfort, and long-term effectiveness in pediatric space management.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034472 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : 3D PRINTEND POST AND CORE IN ENDODONTICS

(51) International classification :B33Y0080000000, A61C0005500000, B33Y0010000000, A61B0006400000, A61C0005400000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a 3D-printed post and core system designed for the restoration of endodontically treated teeth, particularly in cases with wide, flared, or irregular root canals. This system leverages CBCT imaging and 3D modeling to create custom-fit posts and cores that precisely match the unique anatomy of the patient's root canal, enhancing retention and distribution of occlusal forces. In endodontics 3D printing is a technology which can design and produce 3D models and is proving to improvise the standards of the treatment to the patients as it is less technique sensitive and more accurate. Being a cost-effective alternative, it is emerging as a better accepted application in the field of endodontics.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034494 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TONGUE CLEANING DEVICE

(51) International classification	:A61B0017240000, A61L0002100000, A46B0015000000, A63B0071060000, B08B0001120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A tongue cleaning device, comprising an elongated hollow housing 101 having multiple looped scraping mounted on a pair of sliding units 201 by means of hinges 108, for scraping of user's tongue, a telescopic rod 104 having a brush 105 for scrubbing of tongue of the user, a vibration unit to vibrate the brush 105 during scraping, an artificial intelligence-based imaging unit 106, to determine build-up on the tongue, an e-nose to detect volatile compounds emitted from the user's mouth, a holographic projection unit 107 for providing visual guidance to the user to reach inaccessible areas of the tongue, an optical pH sensor detect a pH of mouth of the user, a nozzle 112 to dispense mouthwash of appropriate pH from a multi-section chamber 202 to maintain pH of user's mouth, a UV (ultraviolet) lamp 109 emit UV light for eliminating microbes in the user's mouth.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034495 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : EGGSHELL BASED BIOGENIC SMALL PARTICLE REAGENT (SPR) PREPARATION DEVICE

(51) International classification :B08B0003020000, D06F0039080000, F24F0011520000, B02C0019060000, G06F0003048800

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
An eggshell based biogenic small particle reagent (SPR) preparation device, comprising rectangular base 101 supports touch-enabled display unit 102, allowing users to input touch commands for SPR preparation, first chamber 103 having multiple nozzles 104 for spraying cleaning liquids onto eggshells placed inside, second chamber 105 contains heating coils 106 for heating water from attached water tank 107, boiling eggshells to soften them, multiple iris holes 109 enables water drainage post-boiling, Peltier unit 108 regulates moisture content in eggshells detected by moisture sensor, third chamber 110 transferring eggshells for grinding into powder by crushing arrangement 112, laser diffraction sensor detects powder particle size, fourth chamber 113 heats crushed eggshell powder for calcination using heating elements 114, semi-circular multi-part box 115 stores additives to be mixed with powder in mixing assembly 116, artificial intelligence-based imaging unit 118 determines SPR quality via assessment module and suggest parameter changes via display unit 102.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034167 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : PROGRAMMABLE ELECTRONIC SYRINGE PUMP WITH CLINICAL SETTING-BASED DRUG DELIVERY CONTROL AND BIOFEEDBACK MECHANISM

(51) International classification	:A61M0005310000, B29C0064393000, A61M0025100000, A61M0005315000, A61M0005145000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Embodiments of the present disclosure may include a contactless syringe pump system for precise drug delivery, including a vacuum pump to create negative pressure for drug movement without direct contact, ensuring contamination-free delivery. In some embodiments, the system of claim 1, further including an optical sensor configured to analyze drug volume by measuring light intensity passing through the drug path, enabling real-time monitoring and adjustments. In some embodiments, the system of claim 1. In some embodiments, the vacuum pump may be capable of maintaining a consistent negative pressure throughout the drug delivery process, ensuring controlled and precise drug flow.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034168 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED WELDING DEVICE FOR SMALL DIAMETER PIPES

(51) International classification :B23K0037020000, B23K0037000000, B23K0026210000, B23K0009167000, B23K0026700000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Embodiments of the present disclosure may include AAutomated Welding Device an automated welding device designed for joining small diameter pipes or tubes, incorporating a central motor and a micro motor for precise 360-degree motion and frame analysis-based adjustments. Embodiments may also include smallering Stapler Mechanism a smallering stapler mechanism integrated into the device for efficiently cutting and preparing the ends of pipes or tubes before welding. Embodiments may also include MIG/TIG Laser Welding Manipulator System an automatic welding process utilizing a MIG/TIG laser welding manipulator system to enhance precision and weld quality.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034169 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A TOOTH WITH BRISTLE-BASED MOUSE FUNCTIONALITY

(51) International classification	:G06F0003010000, G06F0003041000, G06F0003048800, H04W0052020000, G06F0003048420
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a dental-input device that enables hands-free control of electronic devices using oral gestures. The device comprises a bristle structure equipped with nano touch and pressure sensors that detect tongue movements and applied force, converting them into digital signals. A micro motor dynamically adjusts the bristle position, while a Bluetooth module facilitates wireless communication with external devices. The system processes input data using an integrated microprocessor and provides haptic feedback for real-time interaction confirmation. A calibration module allows users to customize sensor sensitivity, and a power management system ensures efficient battery usage. Designed from biocompatible materials, the device offers a safe, hygienic, and intuitive solution for hands-free digital interaction.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034170 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED HOME REPAIR AND MAINTENANCE SYSTEM

(51) International classification	:G06Q0040020000, G06Q0010060000, G06F0040300000, G06Q0040060000, G06Q0040000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a comprehensive, automated system for home repair and maintenance that integrates augmented reality (AR), natural language processing (NLP)-based budgeting, real-time water cost analysis, and long-term financial planning tools. The system allows homeowners to visualize home repairs, manage budgets, and track water usage efficiently. Additionally, it incorporates predictive algorithms and optimization techniques to reduce costs and enhance decision-making. With features like 3D modeling, cost estimation, and financial planning, the system empowers homeowners to maintain their properties while achieving long-term financial stability.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034496 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : POSTURAL SUPPORT AND MOBILITY ASSISTIVE DEVICE

(51) International classification :A61B0005000000, A61B0005110000, A61G0005100000, A61G0005120000, A61H0003040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A postural support and mobility assistive device comprises of a body 101 configured with a seat section 102 and a backrest section 103 for allowing a user to attain a seating posture over the body 101 for postural rehabilitation with a footrest 106 pivotally attached to support user's legs, two handles 107 installed on the body 101 for accommodating hands to secure with rollers 109 via straps 108, a microphone 110 for user input of assistance in attaining standing posture, a Scott Russell assembly 111 to optimize angle of backrest along-with hinge joints 112 ensuring smooth transitions to standing posture, the user grips supporting bars 113 installed on the body 101 via a Peaucellier-Lipkin for support, an imaging unit 115 to detect posture of the user, two vertical sliders 116 provide spine support via plates 117, plurality of sensing modules 118 are there to assess health condition of the user.

No. of Pages : 21 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034497 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INTEGRATED BAKING DEVICE

(51) International classification	:A47J0037060000, A21B0005020000, A21B0003130000, A21D0010040000, A21B0001440000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
An integrated baking device, comprising a housing 101 featuring a touch-enabled display unit 103 for users to input commands and preferences for baked goods, a baking module generating recipe and ingredient list, an enclosure 201 with hinged, contains heating elements 202 for baking, a baking tray 203 with sliding units 204, get easily inserted or removed from the enclosure, a chamber 205 stores ingredients in separate sections and features grinding unit 218 that prepares ingredients according to the baking module's instructions, guided by speaker 106, a mixing box 206 with expandable panels 207 receiving ingredients from the sections via conduits 208 and preparing batter for the item, an L-shaped telescopic arm 209 is with circular plate 211 and flap 212 mixes the ingredients, a vessel 214 receives the batter and features a vibration unit to remove bubbles, an articulated, three-part telescopic gripper 217 places vessel in the enclosure for baking.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034498 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE REHABILITATION SUPPORT DEVICE

(51) International classification :A61H0001020000, A61H0023020000, G06F0003010000, A61H0009000000, A63B0024000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A wearable rehabilitation support device, comprising of a wearable body 101 configured with a strap 102 adapted to be worn by a user over waist portion, first motorized roller 103 wrapped with strap 102 for rotating on its axis to properly fit body 101 around waist portion, imaging unit 104 detecting and analyzing exact location of injury or condition, multiple foldable supporting panels 105 via a pneumatic link 106, providing customized support to hip, knee, and ankle, inverted L-shaped telescopic bar 107 integrated with a motorized wheel 108, that rotates and assists user in moving along surface, a robotic arm 110 positioning a suction cup 109 over affected area, to create a suction effect on skin, extendable rod 111 integrated with an U-shaped member 112, that is equipped with vibrating units 113 to provide localized vibration therapy to affected area, inbuilt microphone 114 providing voice commands regarding requirement of muscle relaxation.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034499 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : EYE CARE AND RELAXATION FACILITATION DEVICE

(51) International classification :G06F0003010000, A61H0015000000, A61H0007000000, A61H0033000000, A61F0007000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
An eye care and relaxation facilitation device, comprising a rectangular mask-shaped body 101, a flexible strap 102 secure body 101 in place, an imaging unit 103 detecting shape and size of user's face, multiple flaps 104 covering user's face, a motorized roller 105 winding and release flaps 104 securely, a motorized slider 106 with adjustable bars 107 facilitating movement of various therapeutic tools 108, two small adjustable links 109 are integrated with small electronic nozzles 110 dispense precise amounts of solution to user's eyes, gel-based heating and cooling bags 113, 114 are integrated with a free-end of poles 112 directly over user's eyes, a sliding arrangement 116, allowing a massaging unit 115 to move around edges of body 101 to provide a gentle massage to areas, an adjustable arm 117 holding and supporting massaging unit 115 as massaging unit 115 moving across different parts of user's face.

No. of Pages : 27 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034500 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : VEHICLE RIDING WEARABLE ASSISTIVE DEVICE

(51) International classification :G02B0027010000, G01C0021360000, G02C0011000000, H04R0001100000, G05D0001000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A vehicle riding wearable assistive device comprises of a frame 101 having a pair of transparent lenses 102 for positioning against eyes, a pair of hinged temples 103 to stabilise the frame 101 on ears, an in-ear speaker 104 attached with each of temples 103 by an L-shaped telescopic arm 105 for transmitting audio information, a user interface installed with a computing unit to enable the computing unit to connect with a communication unit to enable the user to input destination, a GPS (Global Positioning unit) unit determining an ideal route to the destination, an HUD (Head up Display) 106 displaying the route, a projection unit 107 to project indicating visuals regarding the user's disability, an imaging unit 108 for recording and processing images in synchronisation with a LIDAR (Light Detection and Ranging) sensor and multiple microphones 109 to record ambient sounds to determine vehicles and obstructions.

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034501 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE POSTURE ALIGNMENT AND SUPPORT DEVICE

(51) International classification :H02J0007000000, A47C0016000000, H04L0009400000, A47F0010020000, G06V0020200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A wearable posture alignment and support device, comprising a curved-shaped body 101 constructed with plurality of curved-shaped extendable panels 102 positioned at a lower back portion of a user, an imaging unit 103 detecting dimensions of waist portion, multiple first motorized hinges tilting panels 102 towards /away from each other in view of securing body 101 around user's waist portion, a primary extendable plate 104 attached along top perimeter of body 101 via a first extendable link 105 integrated with plurality of motorized hinge joints, multiple secondary extendable plates 106 radiating from first plate via second extendable links 107, to align with user's upper back areas, a pair of hydraulic pistons 109 equipped with a square-shaped flap 110 to provide comfort and support during standing process, a foam roller 111 moving across feet and legs of user, targeting areas where tingling or discomfort is present.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034502 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : THERAPEUTIC PAIN RELIEVING DEVICE

(51) International classification :A61H0007000000, F16D0027105000, A61H0023020000, A61H0015000000, A61F0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A therapeutic pain relieving device comprises of a pair of wearable bodies 101 extending from foot area to the knee mimicking profile of a boot, developed to be worn over leg portion, multiple straps 102 for securing the bodies 101 around legs of the user, multiple rollers 103 for rotating the straps 102 on its axis, an NIRS sensor 104 to monitor condition of user's veins, a pair of sliders 105 to adjust position of a plate 202, a pusher 201 to provide tapping and rubbing therapy, multiple pneumatic pins 203 for enhancing therapeutic effect by providing massaging, multiple chambers 109 stored with massaging oils, a nozzle 110 for dispensing the oils on the user's legs, a panel 111 attached via a motorized hinge joint, an electromagnetic spring 112 to elevate the panel 111, multiple air cushion patches 113 to inflate and deflate in a rhythmic sequence.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034503 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PERSONALIZED HYDROSTATIC REHABILITATION ASSISTIVE DEVICE

(51) International classification :A61H0001020000, A63B0021000000, A61H0039040000, B25J0009000000, A61H0003000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
A personalized hydrostatic rehabilitation assistive device, comprising a housing 101, a L-shaped rod 103 integrated with a wearable harness 104 that is to be engaged with torso portion of user, an imaging unit 105 tracking user's movement, a motorized slider 106 enabling lateral/vertical movement of harness 104 in response to user's motion, an L-shaped bar 107 is attached with a footrest 108 to assist user in performing stretching exercises, two vertical hydraulic links 111 enabling changes of angle of a conveyor belt 110, multiple pneumatic pins 113 on a semi-spherical ball 112 providing acupressure to user's feet, a horizontal plate 114 is installed with multiple hydraulic supporting poles 115 that is integrated with a straps 116 and enables user to engage their feet securely within straps 116, two foam rollers 118 attached with a horizontal motorized sliding unit 117 via a robotic arm 119, for providing movement to rollers 118.

No. of Pages : 28 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034505 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : PLANT DISEASE PREDICTION USING DEEP LEARNING

(51) International classification	:G06N0003080000, G06N0003045000, G06T0007000000, G06V0010820000, G06V0010764000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a system and method for predicting plant diseases using deep learning algorithms. A convolutional neural network (CNN), preferably ResNet50, is trained on large datasets of plant leaf images to detect and classify various diseases with high accuracy. The system includes preprocessing mechanisms such as normalization and augmentation for robust performance and is accessible via a mobile or web-based application that enables users to upload leaf images and receive real-time diagnostic feedback. The backend cloud system hosts the trained model and provides high-speed inference. Class activation maps provide visual interpretability of model predictions, and active learning ensures continuous improvement. The invention supports scalability, secure data handling, and integration with farm advisory systems. It significantly reduces the time, cost, and expertise needed for plant disease identification, thus contributing to smart agriculture and sustainable crop management.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034506 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TECHNIQUE OF PRESERVATION OF ORGANS & TISSUE USING EXPANDED POLYSTYRENE RESIN SOLUTION

(51) International classification :A01N0001020000, A01N0001000000, G01N0001300000, C09D0125060000, C08J0011080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a method for preserving biological specimens using an expanded polystyrene resin solution comprising steps of; washing of the organs; transferring the organs in a fixative solution; washing thoroughly in running tap water; placing the organs in horizontal plates for stabilization; dehydrating the organs; preparing a plastination solution by recycling expanded polystyrene in an organic solvent at a concentration of 15%; impregnating the dehydrated organs in the plastination solution; removing the excess resin; curing the completely dried organs. Commonly the expanded polystyrene is known as Thermocol used for insulation packaging and for construction. Using or recycling this expanded polystyrene as preservative for tissues and organs will help in reducing the accumulation of expanded polystyrene in the surrounding or environment and will also replace the chemical preservation of biological samples.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034516 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS AND SYSTEM FOR PREPARING HIGH-STRENGTH, HIGH-YIELD KRAFT PULP USING EVAPORATIVE DIGESTERS

(51) International classification	:B01D0001260000, D21C0003020000, D21C0001000000, C02F0009000000, D21C0003220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a process and system for preparing high-strength, high-yield Kraft pulp using evaporative digesters. Raw materials are stored separately based on lignin content and bulk density, with high-bulk density materials undergoing wet washing, drenching, and grinding to increase surface area. These materials are cooked in separate digesters with controlled alkali charges. The process utilizes digester-generated saturated vapor for efficient evaporation of weak black liquor (WBL), concentrating it to at least 60% solids. WBL is then transferred to a multiple-effect evaporation system for further concentration, while cooking chemicals are regenerated through flashing in multiple tanks. Waste heat is captured from power plant turbines to improve energy efficiency. This process minimizes chemical consumption, enhances pulp yield, and reduces environmental impact.

No. of Pages : 40 No. of Claims : 30

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034530 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADJUSTABLE NECK SUPPORT DEVICE

(51) International classification :A61H0023020000, A61B0017000000, A61F0005055000, A61H0015000000, A61B0001005000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
A adjustable neck support device, comprises of an elongated member 101 to be position around a neck, an electromagnet 102 to form a looped configuration around neck, a pair of cushioned plates 103 with multiple pin joints 104 for fastening onto shoulders, multiple pneumatic rods 105 to provide rigidity, multiple hinges 106 to enable a curvature of rods 105, an inertial measurement unit to detect neck posture, a user interface to input command for correcting neck posture, rods 105 and hinges 106 to curve rods 105 to correct neck posture, multiple pads 107 connected with Peltier unit 108 for providing heat to reduce muscular stiffness, multiple vibration units for vibratory massage, a dismounting unit for dismounting of member 101, an imaging unit 109 to determine a graspable surface, an L-shaped telescopic gripper 110 grip surface, a microphone 112 provide voice commands for actuation of features of device.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034531 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BIODEGRADABLE SEEDLING NURSERY POT COMPOSITION

(51) International classification :A01N0065260000, A61K0036580000, A01G0009029000, C05G0003800000, A61K0036820000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A biodegradable seedling nursery pot composition comprising of: i) rice stubble waste in the range of 45-50% w/w, ii) cow dung in the range of 24-28% w/w, iii) soil in the range of 6-7% w/w, iv) neem powder in the range of 2-3% w/w, v) tea extract in the range of 4-5% w/w, and vi) water in the range of 10-12% w/w, the soil is nutrient rich soil, the rice stubble waste, cow dung, soil, neem powder, tea extract was mixed, and water was added to obtain a mixture, followed by compressing the mixture in molds and sun drying for 48-72 hours to obtain the seedling pots, and the pots show 75.5% water retention capacity and 88.57% water absorption.

No. of Pages : 25 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034532 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ACUPRESSURE TRAINING SYSTEM

(51) International classification	:A61H0039040000, G09B0005060000, G06F0001160000, G02B0027010000, G06F0003041000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
An acupressure training system, comprising a rotatable platform 101 over a surface via a support block 102, the platform 101 having at least two rods 103, a motor 104 coupled at an end portion of each of the rods 103 in a parallel orientation, each of the motor 104 having a mannequin 105, a touch interactive display panel 107 operated by a user to select regions for acupressure training, an imaging unit 106 to locate position of a user for acupressure training, an array of LEDs 109 (light emitting diodes) to work in a first and second mode, an array of pressure sensors 110 for evaluating pressure applied by the user over the region(s), a holographic projector 108 projects correct technique in case of any discrepancy, an array of vibrating units 111 to provide an additional feedback.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034533 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PERSONAL SAFETY DEVICE

(51) International classification :A61B0005000000, A61B0005024000, A45F0003040000, F41H0009100000, A45C0013000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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(57) Abstract :
A personal safety device, comprising a rectangular body 101 developed to be worn by a user over back portion while going outdoor, a pair of straps 102 secures body 101 around shoulder portion of user, a pair of motorized rollers 103 wrapped with straps 102 properly fit body 101 and straps 102 over user's back portion, a wearable unit 104 worn by user over neck portion as a fashion accessory, a heart rate sensor monitors of user's heart rate, a miniature camera 105 assess user's environment, multiple extendable plates 106 with multiple motorized hinges 107 cover user, multiple motorized iris pores 108 optimizes airflow, a robotic arm 109 with a pepper spray sprays pepper solution, a telescopic rod 110 creates distance between user and attacker, a LDR detects intensity of light surroundings, and an illuminating unit 111 provide illumination in specific areas or targets.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034534 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR DETECTION OF ADULTERATION IN PETROL

(51) International classification :G01N0021350000, G01N0021780000, G01N0031220000, G01N0021310000, G01N0021357700

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
A method for detection of adulteration in petrol comprising the steps: a) preparing a 2% stock solution of Betanin in distilled water, b) diluting the stock solution to 0.1% using distilled water and ethanol in a ratio of 7:3 to obtain working solution, and c) mixing the working solution with petrol sample in a test tube, wherein color change in the test tube indicates presence of impurities in the petrol sample, pH of the working solution was maintained at 5.5, Fourier Transform Infrared (FTIR) spectroscopy is used to analyse the changes in the functional groups and molecular structure of the petrol sample when adulterants are present, and absorption spectrum of the Betanin solution changes upon interaction with adulterated petrol, allowing adulteration to be detected through absorbance measurements at specific wavelengths.

No. of Pages : 26 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202511034535 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE SAFETY SYSTEM FOR VISUALLY IMPAIRED ATHLETES

(51) International classification :G06F0003010000, A61B0005000000, A61H0003060000, A63B0069000000, A61B0005024000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A wearable safety system for visually impaired athletes, comprises of a hemispherical-shaped body 101 with a flexible brim 103, an artificial intelligence-based imaging unit 105 that provides a full view of the playing field and ball trajectory, with a RADAR sensor 106 to measure ball speed and direction, primary and secondary vibrating patches 201 guiding the user's position based on ball feedback, ultrasonic sensors providing 360-degree obstacle detection, with real-time vibration feedback in gloves 301 and vest 401 to avoid obstacles, a vest 401 with airbags 402 inflates upon impact to protect key body 101 areas, an extendable shield flap 108 covering the face for protection, a health monitoring sensing module tracking heart rate, temperature, and hydration and an accelerometer detecting head movement, and the microcontroller providing personalized training feedback.

No. of Pages : 28 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034582 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTIFUNCTIONAL EMERGENCY TRANSFER AND STABILIZATION APPARATUS WITH INTEGRATED FLUID MANAGEMENT AND INJURY PREVENTION SYSTEM

(51) International classification :A61G0001040000, A61G0007100000, A61G0001020000, A61G0007050000, A61M0001000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a multifunctional emergency nursing apparatus designed for rapid patient immobilization, safe lateral transfer, and hygienic fluid management in acute care environments. The device comprises a main body with a slidable patient support platform, an integrated fixation mechanism using threaded rods and compression springs for secure limb stabilization, and a rotatable transfer plate with a spring-dampened guide rail system enabling controlled patient movement without lifting. Additionally, dual filtering troughs and liquid collection tanks are incorporated for real-time separation and disposal of bodily fluids. The apparatus enhances clinical efficiency, reduces secondary injury risks, and improves sanitation during emergency interventions. Its mobile, modular structure ensures adaptability across hospital, ambulance, and field settings. This invention addresses key deficiencies in traditional emergency beds, offering a comprehensive solution for trauma-responsive care.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034586 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR EFFICIENT ENERGY HARVESTING USING QUANTUM TUNNELLING EFFECTS IN NANO-MATERIALS

(51) International classification :B82Y0010000000, H01M0014000000, B82Y0015000000, H02N0002180000, H02J0050000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a system and method for efficient energy harvesting utilizing quantum tunnelling effects in engineered nano-materials. The system comprises two nano-material electrodes—such as graphene, carbon nanotubes, or transition metal dichalcogenides—separated by an ultra-thin insulating or semi-conducting tunnelling barrier. When exposed to ambient energy sources, including thermal gradients, electromagnetic radiation, or mechanical vibrations, electrons are induced to tunnel across the barrier, generating an electrical current without the need for an external voltage source. The tunnelling junctions are designed with asymmetric potential profiles to facilitate unidirectional electron flow and high energy conversion efficiency. The system may further include rectification circuits and nano-scale energy storage elements, enabling reliable, continuous, and maintenance-free power supply to ultra-low-power electronic devices. This invention is particularly suitable for powering autonomous IoT sensors, wearable electronics, and biomedical implants, offering a compact, sustainable alternative to conventional batteries. By leveraging quantum mechanical phenomena, the invention addresses key limitations in current energy harvesting technologies and paves the way for next-generation self-powered nano-electronic systems.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034171 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : GESTURE DETECTION AND CONTROL DEVICE UTILIZING WHOLE BODY SHADOW ANALYSIS

(51) International classification	:G06F0003010000, G06F0003030000, G06F0003042000, G06V0040200000, G01B0011240000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure may include a gesture detection system including an optical sensor configured to capture images of a surface area where shadows may be cast. Embodiments may also include a motorized 360-degree lighting module positioned to illuminate the surface area from multiple angles. Embodiments may also include a processing unit configured to analyze shadow patterns detected by the optical sensor to interpret user gestures. In some embodiments, the system of claim 1. In some embodiments, the optical sensor may be a high-resolution camera that provides detailed shadow images for precise gesture recognition.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034174 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED RECEIPT GENERATOR WITH NATURAL LANGUAGE PROCESSING AND VOICE-BASED TRANSACTION AND CONVERSATION INTEGRATION

(51) International classification :G06Q 20/04, G10L 15/26, G06Q 30/04

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention provides an automated receipt generator system that allows users to generate transaction receipts via voice commands. The system includes a microphone for capturing speech, a Natural Language Processing (NLP) engine to process and interpret the voice input, and various sensors to enhance user interaction through proximity detection, motion tracking, and acoustic profiling. The system integrates with external platforms such as payment gateways and inventory management systems, ensuring seamless transactions and receipt generation. A built-in calculator computes transaction totals, and users can dynamically adjust the receipt in real-time. The device operates offline, providing functionality even without internet access. By leveraging machine learning, the system continuously improves voice recognition and user experience, offering personalized and accurate receipt generation. This invention enhances transactional efficiency, reduces errors, and provides a user-friendly solution for generating digital or physical receipts through voice interaction.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034175 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE CONTROL SYSTEM FOR VEHICLES BASED ON USER BEHAVIOUR

(51) International classification	:B60W0040080000, B60W0040090000, B60W0050140000, H04N0007180000, G06V0020590000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an adaptive vehicle control system that utilizes a plurality of external and internal sensors along with advanced machine learning algorithms to enhance driving safety, efficiency, and user experience. An adaptive vehicle control system, comprising: plurality of external sensors configured to capture data from the vehicle's surroundings, including forward-facing cameras, rear and side cameras, LIDAR, radar, and GPS; a plurality of internal sensors configured to capture data related to the driver's behavior, including a driver monitoring camera, fingerprint recognition module, steering wheel sensors, and pedal sensors; a microcontroller unit (MCU) configured to aggregate and process data from the external and internal sensors; and a machine learning model trained on historical driving data to analyze, predict, and replicate driver behavior in real-time. The system dynamically modifies throttle response, steering sensitivity, braking force, and gearbox management based on driver preferences and external conditions.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034176 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DYNAMIC RAIL-MOUNTED BLUETOOTH CAMERA SYSTEM FOR VIRTUAL REALITY AND 3D CONTENT CREATION

(51) International classification	:G06T0019000000, H04N0007180000, H04N0023540000, G06K0007100000, H04N0013296000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a dynamic rail-mounted Bluetooth camera system designed for virtual reality (VR) and three-dimensional (3D) content creation. The system comprises a movable camera unit mounted on a rail structure, allowing precise and automated motion along predefined paths. The camera communicates wirelessly via Bluetooth, enabling real-time control and synchronization with external devices, including VR headsets, gaming systems and 3D rendering software. The system further integrates motion-tracking capabilities and adaptive speed adjustments, ensuring smooth and accurate capture of dynamic scenes. By enhancing spatial awareness and motion precision, the invention facilitates immersive VR experiences and high-quality 3D content generation.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034177 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED JOB MATCHING PLATFORM

(51) International classification	:G06F0003010000, G06N0003045000, G06V0010820000, G06N0020000000, G06V0040200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an automated job matching platform that leverages machine learning and a virtual environment to enhance recruitment and candidate evaluation. An automated job matching platform, comprising: a machine learning-based job recommendation module configured to analyze user profiles, skills, and job requirements to generate job recommendations; a gesture detection system, including a Convolutional Neural Network (CNN), trained to recognize predefined gestures from captured video frames or images; an optical sensor configured to capture real-time video frames or images representing user gestures; a classification module configured to process video frames using the CNN to classify gestures and map them to predefined actions within the platform; and a task automation engine configured to execute specific job-matching or application-related tasks based on detected gestures. Additionally, the system integrates a virtual job interview environment, enabling candidates to interact through gestures for enhanced engagement.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034178 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVICE FOR HARNESSING VIBRATIONAL ENERGY FROM MUSICAL INSTRUMENTS FOR ELECTRICITY GENERATION

(51) International classification	:A63F0013814000, H02N0002180000, G06T0007000000, G06V0020400000, A61B0008080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a piezoelectric rhythm guidance device designed to capture and convert musical instrument vibrations into electrical energy. The device includes a vibration transducer unit, an energy harvesting and storage module, a rhythm processing unit, and a multimodal feedback mechanism. Using frequency analysis techniques, the system detects rhythm deviations and provides real-time feedback through visual indicators, auditory signals, or tactile vibrations. It features an adaptive learning algorithm for improved rhythm precision and a wireless communication module for external synchronization. The device is lightweight, portable, and seamlessly integrates with musical instruments, offering an eco-friendly, self-powered, and accessible rhythm guidance solution for musicians.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034179 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED TASK MANAGEMENT AND SCHEDULING OPTIMIZATION SYSTEM

(51) International classification	:G06F0003010000, G06T0019000000, G06Q0010063100, G06N0020000000, G06Q0010040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention relates to an AI-powered task management and scheduling optimization system that integrates optical sensors, augmented reality (AR), and machine learning algorithms to enhance user productivity. A system for task management and scheduling optimization, comprising: one or more optical sensors configured to detect user movements, including hand gestures and posture changes; an augmented reality (AR) module for overlaying task-related information within the user's field of view; a machine learning unit trained to analyze user behavior, including motion patterns and concentration levels; and a task scheduling engine that dynamically adjusts user task schedules based on detected activity and focus levels. An AR-based task overlay system provides visual guidance, step-by-step procedural assistance, and interactive task controls in the user's field of view. A machine learning-based scheduling engine dynamically reorders tasks based on detected productivity patterns, task complexity, and user engagement levels.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034180 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED DETECTION SYSTEM FOR IDENTIFYING PARTIALLY CONSUMED BOTTLES IN PUBLIC SPACES

(51) International classification	:H04N0007180000, A61B0005000000, G06V0020520000, H04N0021442000, G06T0007000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention relates to an automated detection system for identifying and managing partially consumed bottles (orted bottles) in public spaces using UV light analysis and AI-driven vision processing. An automated detection system for identifying partially consumed bottles in public spaces, comprising: a contact sensor configured to detect when a bottle comes into contact with a user's lips; a UV light source integrated with the system to illuminate the bottle for enhanced detection of consumption status; a camera vision system configured to capture images of the bottle; an AI-based processing unit that analyzes captured images and UV data to determine whether a bottle is partially consumed; and a servo motor mechanism adapted to engage a locking system to prevent further dispensing from detected partially consumed bottles. The system further includes a photodetector for monitoring UV effectiveness, a real-time user feedback module, and a logging module for data storage.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034181 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ROCKET-BASED THRESHOLD DETECTION DEVICE FOR EFFICIENT FUEL CONSUMPTION AND OMNIDIRECTIONAL MOVEMENT

(51) International classification	:B64G0001400000, F02D0041140000, F16H0061000000, B60W0050000000, H02J0003140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses a rocket-based threshold detection device designed for efficient fuel consumption and omnidirectional movement. The device integrates advanced sensors and control algorithms to monitor fuel usage, detect threshold levels and dynamically adjust propulsion parameters. By leveraging real-time data processing and adaptive control mechanisms, the system ensures optimal fuel efficiency while maintaining precise maneuverability in various aerospace applications. The invention is particularly applicable in spacecraft propulsion, missile guidance and satellite positioning systems, enhancing operational efficiency and reducing fuel wastage.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034182 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC INFORMATION ANALYZER FOR ERROR-FREE RECORDING IN STORAGE-BASED SYSTEMS UTILIZING NATURAL

(51) International classification	:G10L0015260000, G06F0021620000, G06F0040300000, G06N0003045000, G10L0015180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a device for recording spoken data with enhanced transcription accuracy. The device comprises a high-fidelity microphone with noise-cancellation technology, a 360-degree optical sensor equipped with multiple high-resolution cameras for capturing lip movements, and a processing unit with Natural Language Processing (NLP) algorithms for transcribing speech into text. The system integrates synchronization algorithms to align audio and visual data based on timestamps, ensuring greater accuracy. The NLP algorithms incorporate deep neural networks and contextual analysis to detect and correct errors by comparing transcribed text with lip movements. The processing unit segments audio data for efficient processing and includes contextual guessing algorithms to reconstruct missing words. A user interface provides real-time feedback on transcription accuracy while the system continuously improves by integrating user feedback. Data is securely stored in an encrypted database. This device offers a robust solution for precise, error-free voice data transcription and storage.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034183 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC HAIR CUTTING DEVICE WITH MULTIPLE SCISSORS AND COMB

(51) International classification :B26B0019380000, A61Q0005060000, A63B0071060000, G06Q0030060100, G06F0016953700

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automated hair grooming device incorporating advanced sensor technology to enhance precision and user experience. It features a multi-rolling comb for seamless hair alignment, a treadmill-based mechanism for uniform movement, and an intelligent cutting system that dynamically adjusts height based on real-time feedback from an MPU6050 microcontroller unit and optical sensors. The device ensures accurate tracking, user customization, and personalized styling through an interactive user interface and memory storage. With energy-efficient operation and a robust design, the invention revolutionizes hair grooming by providing an effortless, precise, and repeatable haircut experience.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034184 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTONOMOUS STABILITY MECHANISM FOR WATERCRAFT

(51) International classification	:A61M0005142000, B60G0017015000, A61N0001040000, B60W0050000000, G05D0001000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an autonomous stability mechanism for watercraft, designed to enhance vessel stability in varying environmental conditions. The system comprises a multi-road lifting system with a central road and two side roads, where the side roads feature electromagnetic suspension systems, and the central road is equipped with multiple parallel motors for 360-degree movement. A network of sensors, including wave height, wind speed, tilt, acceleration, GPS, and altimeter sensors, continuously monitors environmental and vessel conditions. A control system processes sensor data using proportional-integral-derivative (PID) and adaptive control algorithms to regulate actuators for optimal stability. The electromagnetic suspension systems utilize feedback control, and motorized actuators employ pulse-width modulation (PWM) for precise adjustments. The system also includes a graphical user interface (GUI) for real-time monitoring and manual adjustments. Fail-safe features such as redundant sensors and actuators ensure reliable operation, making this mechanism highly effective for autonomous watercraft stability management.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034185 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ENABLED CAMERA-BASED VIRTUAL GUIDE INCORPORATING NLP FOR SIGHTSEEING RECOMMENDATION AND ELECTRONIC NAVIGATION TOOL

(51) International classification	:G01C0021340000, G06N0020000000, G01C0021360000, G10L0021021600, G06V0020100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present system provides an interactive navigation and sightseeing recommendation platform by integrating real-time environmental imagery, voice input processing, and geographic data. It comprises a camera for capturing real-time visuals, a microphone with noise reduction for user input, a natural language processing (NLP) module utilizing BERT for intent recognition, and a location data module for determining user position. The system overlays real-time imagery with satellite maps from Google Maps API or Map box API and incorporates environmental data, including temperature, air quality, and weather conditions, through dedicated sensors. A processing unit analyzes these inputs to generate personalized navigation instructions and sightseeing recommendations, dynamically adjusting routes based on environmental conditions. A feedback loop refines suggestions based on user preferences and historical data. Additionally, multilingual support enhances global usability. The system enhances travel experiences by providing real-time, context-aware navigation and alerts for extreme conditions, ensuring safe and optimized sightseeing for users worldwide.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034186 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART GPS-EQUIPPED BIKE WITH LOW-SHOCK NAVIGATION SYSTEM

(51) International classification	:G01C0021340000, G06Q0010047000, G01C0021360000, A61B0005110000, A61B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a smart bicycle navigation system that enhances rider comfort and safety through real-time shock detection, adaptive shock absorption and optimized route planning. The system comprises a plurality of sensors to measure road vibrations and shocks. A GPS module provides real-time location tracking, while a shock detection algorithm processes sensor data to determine shock intensity. A route optimization algorithm selects an optimal path by evaluating shock intensity, distance and travel time. An augmented reality (AR) display provides real-time feedback on shock levels, route recommendations and navigation prompts with interactive controls for route selection and system adjustments. The adaptive shock-absorbing mechanism dynamically adjusts their damping characteristics based on detected road conditions. Additional features include a data pre-processing module for sensor data refinement, a user feedback mechanism for assessing ride comfort, and a user preferences module for customized route planning and shock absorption settings.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034187 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI-PARTICIPANT LEGAL TRANSLATION AND AMPLIFICATION SYSTEM

(51) International classification	:G06Q0050180000, G06F0040580000, G06F0040300000, G06Q0010100000, G06Q0010063100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a multi-participant legal translation and amplification system that enables collaborative translation and refinement of legal texts. The system comprises a translation engine integrated with legal domain-specific linguistic models, a multi-user collaboration platform and an intelligent amplification module that ensures contextual accuracy and consistency. Participants, including legal experts, translators and reviewers, interact through a structured workflow that incorporates iterative feedback mechanisms. The system enhances translation accuracy by leveraging artificial intelligence, natural language processing and legal terminology databases, thus improving the precision and reliability of translated legal documents.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034188 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : COLLISION RECORD STORAGE AND CAMERA SYSTEM WITH PRE-ACCIDENT CAPTURE & DETECTION

(51) International classification	:G06V0010460000, G06T0007000000, H04N0013271000, G06V0020640000, H04N0007140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention describes a depth sensing device equipped with an optical sensor capable of capturing 2D images of a scene or object. The optical sensor can dynamically adjust parameters such as resolution, exposure, and focus to enhance image quality. A pre-processing module applies noise reduction and colour correction algorithms to improve feature detection accuracy. The device integrates a depth extraction algorithm that employs feature detection methods, such as Scale-Invariant Feature Transform (SIFT) and Speeded-Up Robust Features (SURF), to identify and extract key points from captured images. Depth information is derived using techniques like Depth from Defocus, Depth from Focus, and Stereo Vision. The extracted depth data enables the generation of a 3D point cloud, facilitating precise spatial analysis. This technology finds applications in 3D modelling, augmented reality (AR), virtual reality (VR), and automated measurement systems, providing enhanced depth perception and accuracy for various industrial, robotic, and computational imaging applications.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034189 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WHEELCHAIR ADAPTABLE TIRE TUBE SYSTEM

(51) International classification	:A61G0005060000, G06F0009451000, B66B0009080000, A61G0005100000, G01S0017420000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an AI-driven accessibility system for wheelchair users to safely navigate stairs and enter electric vehicles. It consists of a dynamic sliding staircase system with motorized telescopic stair panels and an adaptive wheelchair tire system featuring shape-modifying, high-traction tires. The system utilizes AI-powered sensors, LIDAR scanning, and servo motors for real-time adjustments to stair inclination, wheelchair stability, and traction. A servo-driven seat leveling mechanism ensures balance and comfort. The system integrates automated obstacle detection, user interface controls, and emergency safety features, enhancing accessibility and independence for individuals with mobility impairments. The intelligent control system learns from user interactions, optimizing movement and power efficiency. The accessibility system seamlessly integrates with smart vehicles and home automation, providing a fully automated, adaptable, and energy-efficient accessibility solution for wheelchair users.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034193 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTONOMOUS NOISE ADAPTIVE MICROPHONE SYSTEM WITH AI VOLUME ADJUSTMENT

(51) International classification	:H04N0007140000, H03G0003320000, H04R0025000000, G06N0020000000, H04R0027000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an intelligent microphone system that autonomously adjusts volume based on real-time ambient noise analysis. The system integrates AI-driven noise classification, RNC and accelerometer-based sensors, adaptive filtering, and machine learning techniques to optimize speech clarity. A central processing unit processes audio signals and differentiates between human speech and background noise, dynamically adjusting volume. A feedback mechanism refines system performance, while user customization options provide flexibility. The system features energy-efficient power management and seamless integration with external devices, making it suitable for diverse applications such as public speaking, virtual meetings, and assistive communication.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202511034194 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED SPACE ARRANGEMENT SYSTEM UTILIZING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

(51) International classification	:G06N0020000000, G06N0003080000, G06N0007010000, G06F0018400000, G06N0003088000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to an automated space arrangement method and system that optimizes space utilization by efficiently arranging objects within a given area. The method involves receiving input parameters, including space dimensions and object characteristics, followed by the analysis of vacant space using Artificial Intelligence (AI) and Machine Learning (ML) algorithms. Based on this analysis, optimal placement strategies are generated, and objects are arranged according to these strategies. In certain embodiments, the input parameters may include user-defined constraints and preferences, and object characteristics may be analyzed using computer vision techniques. Additionally, the AI and ML algorithms continuously learn and adapt based on feedback and historical data to improve the arrangement strategies. The system includes an input module for receiving the input parameters, along with various components to process the space analysis, object recognition, and arrangement optimization. This approach ensures efficient and dynamic space utilization for various applications.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/04/2025

(21) Application No.202511034643 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : JOSHINA-DERIVED ZN-DOPED CARBON DOTS AS SUPERIOR ANTIBACTERIAL AGENT AND ANTIOXIDANT

(51) International classification	:A23L0033105000, A61K0036484000, A61K0036185000, A61P0031040000, A61P0039060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Bacterial resistance to antibiotics remains a major global health concern, while synthetic antioxidants used in food, pharmaceutical, and cosmetic industries are increasingly restricted due to health risks and poor bioavailability. Addressing both challenges, this invention introduces a novel advancement in biomass-derived carbon dots (Cdots) that function as dual-action antibacterial and antioxidant agents. Utilizing Joshina—a traditional herbal blend containing Assyrian plum, Creeping Charlie, Marsh Mallow, Jujube, Sweet Flag, Sedge, Licorice, and Wood Violet—as the biomass source, Zn-doped carbon dots (Zn-Cdots) are synthesized through a single-step, eco-friendly hydrothermal method. These Zn-Cdots exhibit excellent antibacterial efficacy against both Gram-negative and Gram-positive bacteria, notably Serratia marcescens and Staphylococcus aureus. Their antioxidant performance, validated through TMB and ABTS assays, shows high efficiency in scavenging reactive oxygen species (ROS). This green synthesis approach not only enhances biological activity but also promotes environmental sustainability, offering a safe and effective alternative to synthetic antibacterial and antioxidant agents.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/04/2025

(21) Application No.202511034672 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANALYSIS OF WHY SOCIAL MEDIA IMPORTANT FOR E-COMMERCE

(51) International classification :G06Q0050000000, G06Q0030024200, G06Q0030020100, G06N0020000000, G06Q0030025100

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The proposed invention relates to an intelligent system for analyzing the importance of social media in the field of e-commerce. It enables the collection, processing, and interpretation of data from various social media platforms to understand their impact on consumer behavior, brand perception, and online purchasing decisions. The system integrates artificial intelligence, sentiment analysis, and behavioral modeling to derive insights that help businesses measure social engagement, influencer effectiveness, and campaign ROI. It provides real-time tracking, predictive analytics, and performance reporting, which aid in optimizing digital marketing strategies. By bridging the gap between social media interactions and e-commerce metrics such as conversions and retention, the system enables businesses to make informed decisions. The invention supports scalability, ethical data usage, and regulatory compliance. It empowers both small and large e-commerce enterprises to utilize social media as a measurable, impactful tool for brand growth, customer engagement, and revenue generation in today's digital economy.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2025
(21) Application No.202511034735 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GRISEFULVIN LOADED TOPICAL ETHOSOMAL GEL FORMULATION FOR SKIN FUNGAL INFECTIONS AND PREPARATION METHOD THEREOF

(51) International classification :A61K0009000000, A61K0047100000, A61K0009060000, A61K0008340000, A61K0047320000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Present invention discloses griseofulvin loaded ethosomal based topical gel for skin fungal infections and preparation method thereof. The formulation consists 20% ethanol, 1% soy phosphatidylcholine (SPC), 2% propylene glycol, 30% water and 250 mg of griseofulvin (GRF) loaded in carbapol gel. The formulation was prepared by dissolving phospholipid and griseofulvin in ethanol within a covered vessel at room temperature. Propylene glycol is added while stirring, and the mixture is heated to 30°C in water bath. In separate container, water is heated to 30°C. The heated water is then added to ethanolic mixture, and the resulting solution is shaken at 700 rpm for 5 minutes, stored final formulation under refrigeration and then griseofulvin-loaded ethosomes are incorporated into a carbopol gel. The resulting ethosomal gel are off white in colour & possesses 6.7 to 6.8 pH, 5.45mg/cm/sec±0.004 spreadibility, -13.1mV zeta potential, 338.6nm particle size and releases about 84.56% drug in 10 hours.

No. of Pages : 30 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/04/2025

(21) Application No.202511034741 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI- POWERED DYNAMIC FINANCING MECHANISM FOR EXPORT SHIPMENTS BASED ON REAL-TIME TRADE & LOGISTIC INSIGHTS

(51) International classification :G06Q0040030000, G06Q0040040000, G06Q0010080000, G06N0003045000, G06F0009380000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
An AI-powered dynamic financing system (100) for export shipments. The system (100) comprises: a user interface (102) configured to enable an exporter, financier, or logistics provider to input requests and retrieve insights associated with international trade operations; a data engine (104) including real-time trade documentation, shipment tracking, and market intelligence integrated with exporter profiles and financial history; and a processor (106) communicatively coupled with the user interface (102) and the data engine (104), wherein the processor (106) is configured to assess export-related risks, compute eligible dynamic credit terms, and trigger financing actions. The system (100) utilizes machine learning models to analyze trade and logistics patterns, enabling timely alerts and tailored financial decisions, which are reflected over the user's computing unit in real-time.

No. of Pages : 14 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2025
(21) Application No.202511034879 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CHEMICALLY MODIFIED LOCUST BEAN GUMPATCHES OF LACTUCA SATIVA LEAF EXTRACT

(51) International classification :A61K0009700000, A61K0009000000, A61K0047100000, A61K0047380000, A61K0009200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a transdermal patch formulation comprising frusemide or Lactuca sativa leaf extract for sustained drug delivery. The patch is prepared using a polymeric matrix of hydroxypropyl methylcellulose (HPMC), ethyl cellulose, and a gum selected from locust bean gum (LBG) or its carboxymethylated derivative (CMLBG), with propylene glycol as a plasticizer and dimethyl sulfoxide (DMSO) as a permeation enhancer. The formulation is cast using a solvent system of methanol and chloroform in a 1:1 ratio. The resulting patch exhibits uniform thickness, flexibility, and transparency, with effective drug loading and controlled release properties. The method provides a stable, non-invasive, and skin-compatible system for the transdermal delivery of a diuretic or herbal extract with potential therapeutic applications in fluid retention and related conditions.

No. of Pages : 25 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/04/2025

(21) Application No.202511034880 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ALUMINIUM MATRIX COMPOSITE REINFORCED WITH SAGWAN WOOD FLY ASH AND ITS PREPARATION METHOD

(51) International classification :C22C0001100000, C22C0032000000, G01N0003420000, C22C0001040000, B22D0019140000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a method for fabricating aluminium metal matrix composites (MMCs) reinforced with Sagoon wood fly ash using the stir casting technique. Al 6063 alloy is used as the base matrix due to its lightweight and favorable mechanical properties. The fly ash, preheated at 60°C, is added in varying proportions (8 wt%, 12 wt%, and 16 wt%) and uniformly dispersed in the molten alloy through mechanical stirring to form a homogenous composite. The mixture is then cast into preheated moulds and allowed to solidify under ambient conditions. Mechanical testing reveals a notable enhancement in properties: the composite with 12 wt% fly ash shows a 14% increase in tensile strength, a 17% rise in impact strength, and a 12% improvement in Brinell hardness compared to the unreinforced alloy. Microstructural analysis confirms uniform distribution of fly ash and good interfacial bonding, making the composite suitable for structural and automotive applications.

No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511032862 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NEURAL NETWORK-BASED END-TO-END CHANNELCODING SYSTEM WITH INTEGRATED ERRORDETECTION FOR BINARY AND M-ARY MODULATIONSCHEMES

(51) International classification	:H04L0001000000, G06N0003044000, H03M0013090000, H04L0001160700, G06N0003080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses a neural network-based channel coding system for reliable data transmission over noisy digital communication channels. The core of the invention is a recurrent neural network (RNN)-based encoder–decoder architecture that learns soft redundancy and temporal correlation to enable highly accurate decoding over additive white Gaussian noise (AWGN) channels. Operating on binary input sequences, the system jointly performs modulation, encoding, and decoding in a fully trainable, end-to-end framework. An optional learned validity flag provides probabilistic decoding confidence, enabling intelligent error detection and support for automatic repeat request (ARQ) protocols without the need for explicit cyclic redundancy check (CRC) bits. The proposed system achieves near-zero bit and codeword error rates under high noise conditions while maintaining a higher effective code rate than classical coding schemes such as Hamming or CRC-augmented block codes. Furthermore, the architecture is modular and readily extendable to higher-order modulation schemes, including M-ary PAM and QAM, through minor input and output adaptations.

No. of Pages : 35 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202511032885 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR PREPAREDNESS OF HEALTH FACILITIES TO PROVIDE HEALTHCARE SERVICES TO TRANSGENDER COMMUNITY

(51) International classification :G16H0040200000, G16H0010600000, G06Q0010063900, G06Q0010063700, G16H0040670000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
Disclosed herein is a method for preparedness of health facilities to provide healthcare services to transgender community (100) comprises selecting government and private health facilities (102) using purposive sampling to ensure a representative study population. The method includes collecting quantitative data from a predetermined number of government and private health facilities (104) using structured questionnaires to evaluate facility preparedness for transgender healthcare services. The method also includes conducting qualitative data collection through in-depth interviews with healthcare service providers and transgender individuals (106) to gain insights into existing barriers and facilitators of transgender-inclusive healthcare. The method also includes analyzing the collected quantitative and qualitative data (108) to identify gaps, challenges, and opportunities in the provision of healthcare services to the transgender community. The method also includes developing recommendations and strategies to improve healthcare facility preparedness (110) based on the analysis.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035496 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTONOMOUS DRONE DETECTION SYSTEM WITH MULTI MODAL SENSOR FUSION AND EARLY INTERVENTION STRATEGIES

(51) International classification	:G06N0003045000, G08G0005000000, G06F0018241100, G06N0003080000, G06T0007292000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The AI-powered vision-based drone detection system is designed to identify and track unauthorized drones in restricted airspace using advanced computer vision and deep learning techniques. The system integrates high-definition fixed and PTZ cameras, infrared (IR) imaging, and AI-driven detection models such as YOLO and RetinaNet with Feature Pyramid Networks (FPNs) for enhanced small-object recognition. A One-Class Support Vector Machine (SVM) filters out non-drone aerial objects to minimize false positives. The system provides real-time tracking and multi-camera coordination, ensuring continuous surveillance of drone movement. A graphical user interface (GUI) and alert system notify security personnel via SMS, email, or dedicated dashboards upon detection. Designed for high-security applications such as airports and military bases, the system operates independently of radio frequency (RF) signals and can integrate with existing surveillance infrastructure and anti-drone countermeasures. This system enhances airspace security, minimizes intrusion risks, and provides proactive monitoring for critical areas.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202511032569 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM FOR SMART HOUSING-BASED IRRIGATION AND SPRAYING USING ARTIFICIAL INTELLIGENCE AND UAV

(51) International classification	:A01G0025160000, A01B0079000000, B64C0039020000, G06N0020000000, A01G0009240000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an autonomous, machine learning-based precision agriculture system with the use of drones, ground sensors, a motorized 360-degree rotating sprinkler, cloud connectivity, and GSM technology. The system provides optimized irrigation and the application of pesticides through real-time data acquisition and analysis. Field mapping is performed aerially through the use of drones with multispectral cameras and LiDAR, while ground sensors validate soil moisture and environmental conditions. A machine learning-powered microcontroller handles the data to make informed decisions on spraying and irrigation. The 360-degree rotating nozzle provides targeted and accurate spraying with minimal wastage of resources. The system is autonomous, and cloud integration provides real-time monitoring through a mobile app. GSM technology provides unbroken communication in remote locations. Non-sensitive farm data is also shared with researchers to ensure sustainability. The present invention enhances crop productivity, reduces environmental impact, and provides a scalable, data-driven solution for modern farming

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2025
(21) Application No.202511035195 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DIRECT CURRENT AIR CONDITIONING SYSTEM FOR LOCOMOTIVE CABIN

(51) International classification :H03B0005120000, B64D0013060000, H05K0007200000, H05B0045385000, F24F0011860000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An air conditioning system for a cabin of a locomotive having a direct current (DC) power source includes a DC power input configured to receive DC power directly from the DC power source of the locomotive, a capacitor bank coupled to the DC power input and configured to process the received DC power to reduce repulsions, a DC compressor coupled to the capacitor bank and configured to provide variable cooling capacity and operate directly using the processed DC power without alternating current (AC) conversion, at least one DC fan coupled to the capacitor bank and configured to provide variable cooling airflow and operate directly using the processed DC power without AC conversion, and a control unit configured to regulate operation of the DC compressor and the at least one DC fan by adjusting the variable cooling capacity and the variable cooling airflow. FIG. 1

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035293 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART LPG STOVE DEVICE

(51) International classification	:H04L0012280000, F24C0003120000, H02J0007000000, F24C0015100000, G05B0015020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Smart LPG Stove Device is a home automation solution that aims to improve kitchen safety. It turns off the gas stove automatically if boiling liquids overflow or when a timer elapses. It runs on an Arduino microcontroller with IR sensors, geared motors, and a user interface. It has two operating modes: sensor-based and timer-based shutdown. Visual and audible notifications provide awareness to the user during operation. Its rechargeable battery system has overcharged and discharge protection. Adjustable connectors provide compatibility with different stove designs. A motor reset mechanism resets the device for the next use. Manual override provides user control in case of emergencies. This intelligent appliance reduces domestic hazards and food wastage through intelligent automation.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035507 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR AI-OPTIMIZED ENERGY HARVESTING AND STORAGE IN SMARTINDUSTRIAL ENVIRONMENT

(51) International classification :G06N0020000000, G05B0023020000, G06Q0050060000, G05B0013020000, H02N0002180000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a method for AI-optimized energy harvesting and storage in a smart industrial environment. The method integrates renewable and ambient energy sources—such as solar, thermal, piezoelectric, and vibration-based energy—using adaptive energy harvesting units. A network of sensors continuously monitors environmental and operational parameters, providing real-time data to an artificial intelligence (AI) controller. The AI controller utilizes machine learning algorithms to forecast energy generation and industrial load demand, dynamically optimize energy harvesting operations, and efficiently manage a hybrid energy storage system comprising batteries and supercapacitors. Energy distribution is prioritized based on load criticality, process schedules, and energy availability. The system also interfaces with smart grids for bi-directional energy exchange and grid-based participation in demand response and energy trading. The AI controller is further enhanced by reinforcement learning to adapt to environmental and operational variability over time.

No. of Pages : 13 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035518 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : KINTSUGI-INSPIRED UPCYCLED GARMENT

(51) International classification :B29C0064000000, H04N0021470000, G06Q0010063700, A41H0043000000, A41B0009000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a sustainably designed garment inspired by Kintsugi, the Japanese tradition of repairing broken pottery using gold. The garment creatively integrates golden beads and carefully designed seams, symbolically representing healing, renewal, and embracing imperfections. The garment is incorporating Kintsugi philosophy with sustainable fashion. By upcycling existing garments with strategically placed golden embellishments, it celebrates imperfections and sustainability. This unique integration of fashion and philosophy visually represents emotional resilience, personal transformation, and environmental consciousness. The garment serves as both wearable art and a symbol of embracing individuality, contributing positively to conversations around sustainability, fashion innovation, and cultural aesthetics.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035527 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "A FERULIC ACID CONJUGATED CYCLODEXTRIN CONJUGATE AND METHOD FOR PREPARATION THEREOF"

(51) International classification :A61K0047690000, B82Y0005000000, C08B0037160000, A61K0047400000, A61K0049000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a ferulic acid conjugated cyclodextrin conjugate, comprising: i) ferulic acid in the range of 10 mg to 30mg; ii) CMC (Carboxymethyl Cellulose) in the range of 250 mg to 1250 mg; iii) PEG (Polyethylene Glycol) in the range of 2 ml; and iv) water in the range of 50 ml. The method for the preparation of conjugate, comprises the steps of A) Preparation of Gamma Cyclodextrin Metal Organic Framework i) adding gamma cyclodextrin and potassium hydroxide to form a solution; ii) adding 5ml distilled water to obtained solution and filter through the membrane filter; iii) vapour Diffuse for 6 hrs at temperature 50 degree Celsius; iii) collecting supernatant and adding equal amount of methanol to the solvent; iv) adding cetyl-Tri ammonium bromide to the solution; and v) precipitate is collected and dried at 40 degrees Celsius; B) Preparation of Ferulic Acid Conjugated Cyclodextrin Conjugate i) Adding the cubic shaped g-CD-MoF (300mg), Ferulic Acid (10mg), Dimethylformamide (DMF) (7ml), 1-Ethyl-3-(3-dimethylaminopropyl) carbodiimide EDC (7.81mg) and 4-Dimethylaminopyridine (DMAP) (6.51mg) and keeping at 37°C for 24 hours at constant stirring of 150 rpm; and ii) Wash the newly formed ppt with methanol and water and dried using lyophilization. Fig 1 to 7

No. of Pages : 22 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2025
(21) Application No.202511034902 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GREEN-SYNTHESIZED FENUGREEK-MEDIATED CO3O4 NANOPARTICLES FORSUSTAINABLE PHOTOCATALYTIC DEGRADATION AND ANTIMICROBIALAPPLICATIONS

(51) International classification :B01J0035390000, C02F0001300000, C02F0101300000, C02F0001280000, C02F0101380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Aspects of present disclosure relate to Trigonella foenum-graecum-mediated Co3O4 nanoparticles as an innovative solution for eliminating industrial azo dyes from contaminated water. The novelty lies in their rapid, cost-effective synthesis and excellent photocatalytic and antimicrobial performance, marking a significant advancement in environmental remediation. The NPs are synthesized using a co-precipitation method and characterized through advanced techniques. XPS analysis validated the synthesis with controlled oxidation states and defect sites featuring Co2+ and Co3+ ions. The optimized synthesis process led to outstanding photocatalytic performance, achieving 100% degradation of Congo red dye in just 60 minutes at a concentration of 120 mgL-1. This efficiency underscores their capability to treat CR-contaminated water under specific conditions. The synergy between TFG phytochemicals and Co3O4 NPs demonstrates significant potential for water pollution remediation. Additionally, these NPs exhibit strong antimicrobial activity against Gram-negative and Gram-positive bacteria, highlighting their broader environmental significance and potential applications in various ecological fields.

No. of Pages : 28 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2025
(21) Application No.202511035016 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR BRIDGING WEB2 DOMAINS TO WEB3 VIA SSL VERIFICATION AND BLOCKCHAIN INTEGRATION

(51) International classification	:H04L0009320000, H04L0009000000, H04L0009400000, H04L0009080000, H04L0009060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a system and method for securely bridging Web2 domains to Web3 environments using decentralized SSL certificate verification. The system includes a domain verification module that parses SSL certificates on-chain and extracts critical cryptographic data, such as public keys and digital signatures, for validation. A central blockchain processing server executes smart contracts that map Web2 domains to Web3 blockchain identities, while a cryptographic validation unit performs RSA signature verification to ensure authenticity. The blockchain security module records all domain verification transactions on the blockchain, ensuring transparency and immutability. The decentralized verification system eliminates the need for centralized oracles by performing all validation tasks directly on-chain, ensuring a trustless, secure, and efficient process. This invention enhances Web2 to Web3 integration by providing a secure, cost-efficient, and scalable solution for domain verification and registration, enabling seamless interoperability between traditional domain management systems and decentralized Web3 infrastructures. Fig. 3.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/04/2025

(21) Application No.202511035043 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVELOPMENT OF WT-ANN MODEL IN THICK FILM SNO2 GAS SENSOR FORPRECISE DETECTION OF VOLATILE ORGANIC COMPOUNDS IN EXHALED BREATH

(51) International classification :G01N0033497000, A61B0005080000, G01N0027120000, G01N0033000000, A61B0005000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a non-invasive diagnostic system for detecting volatile organic compounds (VOCs) in exhaled human breath using a gas sensor array integrated with a Wavelet-Transformed Artificial Neural Network (WT-ANN). The system comprises a custom-designed gas chamber equipped with six SnO2-based thick film gas sensors, each sensitive to different VOCs such as acetone, ethanol, and benzene, which serve as biomarkers for diseases like diabetes, lung cancer, and fatty liver disease. The output from the sensors is processed using a WT-ANN model employing B-spline wavelet transfer functions to improve non-linear feature extraction and predictive accuracy. The system is trained using a labeled dataset and validated with unknown samples, achieving minimal error in gas concentration estimation. This invention offers a reliable, low-cost, and real-time method for disease screening and early diagnosis through breath analysis, and holds promise for integration into point-of-care diagnostic tools.

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035303 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN AUDIENCE MOOD DETECTION SYSTEM USING WEARABLE MOTION SENSORS

(51) International classification	:H04N0007173000, H04N0021442000, G06Q0050000000, H04N0021410000, A61B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses a real-time audience mood detection system for auditoriums comprising smart wristbands (101) equipped with motion sensors (102) and temperature sensors (103) to detect engagement levels. Sensor data is transmitted via a communication module (104) to a central processing unit (105), which analyzes mental fatigue indicators. Results are displayed on a visual display board (106) in graphical or signal format, allowing speakers to assess audience attentiveness and modify presentations accordingly, enhancing communication effectiveness and audience interaction during live events.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035353 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IMMERSIVE TACTICAL MILITARY GEAR SYSTEM

(51) International classification :A61B0005000000, A61B0005024000, H04L0009400000, G06F0003010000, A61B0005110000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an advanced headgear system for military applications, incorporating virtual reality (VR) and augmented reality (AR) technologies, neuro-signal processing, secure communication, and biometric monitoring. This immersive tactical military gear enhances situational awareness, operational efficiency, and safety during missions by providing real-time location tracking, dynamic mission maps, and collaborative VR-based planning. It features internet-independent communication via mesh networking, ensuring resilience in remote or compromised environments. The system also integrates AI for optimized decision-making, including resource allocation and strategy adjustments. Biometric sensors monitor health metrics such as heart rate and stress levels, enhancing personnel well-being. Designed to operate seamlessly in hostile or disconnected areas, the gear offers a comprehensive solution for modern defense operations, improving coordination, mission success, and personnel safety across various military applications. The invention is crucial for modernizing tactical operations in unpredictable and high-risk environments.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035368 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART TIME-OF-FLIGHT RESPONSIVE EYEWEAR FOR STRESS SUPPORT

(51) International classification :A61B0005020500, A61B0005000000, H04W0016280000, H04W0004020000, H04L0043160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed is a data processing apparatus (106) which includes processing circuitry (120). The processing circuitry (120) receives first set of signals representing first set of parameters. The processing circuitry (120) further compares the first set of parameters with the respective predefined threshold parameter. Furthermore, the processing circuitry (120) generates first set of alert signals when the first set of parameters are beyond the respective predefined threshold parameter. Furthermore, the processing circuitry (120) generates, upon generation of the first set of alert signals, the one or more notifications for one or more authorities, and also generates the one or more notifications, one or more control instructions, and one or more suggestive instructions for the user. FIG. 2 is the reference figure.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035392 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A MULTIDIMENSIONAL GAMING SPHERE WITH DETACHABLE SEAT AND IMMERSIVE ENVIRONMENTAL INTEGRATION

(51) International classification :G06F0003010000, A63F0013803000, A63F0013285000, A63B0024000000, B60N0002015000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention introduces an immersive technology platform utilizing a multidimensional spherical design equipped with a detachable seat and a 360-degree surround display for enhanced interactive experiences. The spherical enclosure enables unrestricted user movement and incorporates a removable seat for seated activities such as racing and flight simulations. Integrated environmental simulation modules replicate real-world conditions, including wind, temperature, and humidity, while a haptic feedback suit delivers precise tactile sensations for realistic interaction. It features a modular design, facilitating adaptability for diverse applications such as gaming, fitness, professional training, and education. Its compatibility with modern gaming engines and cloud systems supports collaborative multiplayer environments, ensuring seamless integration with current digital ecosystems.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/04/2025

(21) Application No.202511035061 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART PLUCK: A MOTORIZED DEVICE FOR SAFE FRUIT HARVESTING

(51) International classification	:H01M0010052500, A01D0046240000, A01D0046260000, A01D0046253000, A01D0046000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a motorized fruit harvesting device specifically designed to safely, efficiently, and ergonomically harvest mangoes and other high-hanging fruits. The device incorporates an extendable telescopic rod constructed from lightweight materials, a DC motor-driven rotary cutting blade for precise fruit stem cutting, and a rechargeable lithium-ion battery pack for cordless, portable operation. An integrated flexible mesh net, supported by a metallic frame, captures fruits immediately after cutting, significantly reducing post-harvest damage. The ergonomic design includes user-friendly rubberized handle grips equipped with control switches for operating the motorized mechanism. This innovative solution addresses critical limitations of traditional fruit harvesting methods by enhancing safety, operational efficiency, fruit integrity, and user comfort, while also providing modular adaptability for harvesting various fruit types.

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/04/2025

(21) Application No.202511035115 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR DISPENSING OBJECTS FOR ONE OR MORE SUBJECTS AND A METHOD THEREOF

(51) International classification	:H04L0001000000, G06T0007000000, B29C0064112000, B29C0064393000, F25C0005060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure generally relate to treat dispenser mechanisms, particularly to a system (101) for dispensing objects for subjects. The system (101) comprises a treat releasing unit (103), and treat ejecting unit (105). The treat releasing unit (103) comprises a storage duct (103a) configured to receive object from subjects (111), and roller drums (103b) coupled to storage duct (103a), configured to conform to shape of object (303) using elastomer drum shells (305), rotate while conforming to the shape of the object, release object (303) into treat ejecting unit (105), and transmit excess amount of object (303) into storage duct (103a) by rotating in secondary direction. The treat ejecting unit (105) comprises ejector assembly (105a) configured to receive object from the roller drums, and dynamically dispense object out of treat ejecting unit (105) to subjects (111), through opening valve (311) existing opposite to ejector assembly (105a). [FIG. 1 is a reference figure]

No. of Pages : 58 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/04/2025

(21) Application No.202511035135 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR PROGRESSIVE CONTEXTUAL TRAJECTORY PREDICTION

(51) International classification :G06V10/82, G06N3/04, G06Q10/04, G06N3/0455

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present disclosure discloses a system (102) for predicting a trajectory in a predetermined motion-based condition that can include a data acquisition unit (104) to capture data associated with past trajectory and present trajectory of a moving entity. A processor (106) can extract features, by a deep learning (DL) model (108), from the captured data to determine motion patterns and contextual dependencies. The processor (106) can encode the past and the present trajectory data, by progressive encoder (110), to generate trajectory motion patterns. The processor (106) can compute a context vector (112), through an Encoder-Decoder Contextual Attention (EDCA) mechanism, by combining the extracted set of features, motion patterns, contextual dependencies, and generated trajectory motion patterns. Dynamic Progressive Generator (DPG) (118) can generate a future trajectory sequence based on the computed context vector (112). Adaptive Fuzzified Discriminator (AFD) (116) can analyze the generated trajectory sequence and classify it as a real trajectory or a fake trajectory.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035400 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ANALYTICAL DESIGN AND ENERGY CALIBRATION OF SRI YANTRA

(51) International classification	:A61B0008080000, A61K0031137000, A61P0043000000, G06T0011200000, A61P0001040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Sri Yantra and Sri Chakra represent two-dimensional and three-dimensional geometric depictions of cosmic energy. These sacred diagrams are composed of various shapes such as triangles, rectangles, squares, and lotus petals, forming a complex and highly symbolic structure. Among many types of yantras—like the Mahalaxmi Yantra, Ganesh Yantra, and Saraswati Yantra—each has a distinct geometric design, but Sri Yantra is regarded as the queen of all yantras. It is believed that worshipping the Sri Yantra can help fulfill both material and spiritual aspirations. This article presents an analysis of the energy levels across various sections of the Sri Yantra and proposes a freehand drawing method grounded in scientific and mathematical principles, employing the Fibonacci sequence and the Golden Ratio to ensure precision and harmony.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035402 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART HOME SPEAKER WITH AI GENERATIVE FACILITIES

(51) International classification	:G05B0019418000, G05B0015020000, G06Q0050100000, H04R0001020000, G06F0040205000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention is an innovative smart speaker system that integrates generative artificial intelligence (AI) and emotional intelligence to provide dynamic, personalized user experiences. It performs creative functions like composing personalized music, generating unique storytelling content, and producing visual designs tailored to user preferences. Equipped with multilingual support, advanced privacy measures, and IoT integration, AURORA acts as a central hub for smart home management while ensuring secure and energy-efficient operations. Its adaptive learning mechanism and multimodal interaction capabilities establish it as a versatile, user-centric device.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025
(21) Application No.202511035406 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR REDUCING GLARE IN WINDSHIELD

(51) International classification :G02B0005230000, G02B0027010000, G02C0007100000, G02B0027000000, H04N0025790000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system (104) and method (400) for reducing glare in a windshield (102) is disclosed. The system (104) includes a photochromic layer (112) formed on the windshield (102). The photochromic layer (112) includes a plurality of regions (202). The system (104) further includes a sensor unit (114) disposed on the windshield (102) configured to generate sensor data based on the influx of light impinging on the plurality of regions (202). The system (104) further includes a light source (116) configured to impart light on the plurality of regions (202). The system (104) further includes a control unit (118) communicably coupled to the sensor unit (114) and the light source (116) and configured to generate an activation command and activate the light source to impart light on at least one region (202) from the plurality of regions (202) when the influx of light impinging increases above a predefined influx threshold. [To be published with FIG. 1]

No. of Pages : 33 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035437 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT TRAFFIC MANAGEMENT SYSTEM FOR SMART CITIES

(51) International classification	:G08G0001010000, G08G0001080000, H04N0007180000, H04L0067120000, G06Q0050260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an intelligent traffic management system designed for smart cities, employing a centralized wireless communication network to optimize traffic flow and manage congestion efficiently. IoT-enabled sensors and surveillance cameras are installed at traffic intersections to continuously monitor vehicular movement. The collected data is transmitted to a central control unit that processes the information using AI and machine learning algorithms. This enables dynamic traffic signal scheduling, where green light durations are adjusted based on real-time traffic density. Additionally, the system prioritizes emergency vehicles by automatically modifying traffic signal sequences to provide uninterrupted passage. IoT devices facilitate real-time communication between intersections, ensuring synchronized traffic management. The invention enhances urban mobility by integrating predictive congestion analytics, adaptive rerouting, and secure communication protocols, contributing to the development of sustainable and efficient smart city infrastructures.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035690 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A CARDINALITY-CONSTRAINED APPROACH TO OPTIMAL NON-UNIFORM SAMPLING FOR SIGNAL RECONSTRUCTION

(51) International classification	:H03M0007300000, G06N0005010000, H04L0045125000, H03H0017020000, H04L0027260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Non-uniform sampling techniques play a crucial role in efficiently representing time-varying signals by selecting sample points at irregular intervals. Existing approaches primarily focus on either maximizing reconstruction accuracy or optimizing sample size by reducing redundancies. However, there exists a need to establish a balance between these factors—while increasing the sample size enhances accuracy, it reduces bandwidth efficiency, and under-sampling has the reverse effect. Balancing these competing objectives is essential for high-quality signal representation in resource-constrained environments. The patent introduces a combinatorial approach to optimize non-uniform sampling under a fixed sample size constraint. It seeks to determine the best subset of sample points that ensures the highest reconstruction accuracy while adhering to a cardinality limit

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035702 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NON-TOXIC CLEANING FLUID COMPOSITION FOR LABORATORY GLASSWARE

(51) International classification :A61K0047120000, A61K0008365000, C11D0001660000, C11D0003200000, C02F0101300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a non-toxic cleaning fluid composition for laboratory glassware comprising 4% to 8% alkyl polyglucoside surfactant, 3% to 6% citric acid or sodium citrate, 0.5% to 1% microbial enzymes, 5% to 10% ethanol or isopropanol, 0.2% to 0.5% natural antimicrobial agent, 1% to 3% buffering agent, and balance distilled water. The composition ensures effective removal of organic, inorganic, and microbial residues while being biodegradable, residue-free, and safe for glassware, users, and the environment.

No. of Pages : 24 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2025

(21) Application No.202511035723 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A NON-VOLATILE MEMORY DEVICE

(51) International classification :H01L21/8247, H10B69/00, H01L29/78, H01L29/792

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure discloses a non-volatile memory device 100 based on a Metal/Ferroelectric/Insulator/Silicon (MFIS) structure. The non-volatile memory device 100 comprises an n-type silicon substrate 102, an 8 nm Zirconium Dioxide (ZrO2) insulator layer 104 deposited via RF sputtering, a 100 nm Bismuth Ferrite (BiFeO3) ferroelectric layer 106 deposited using a sol-gel process, and an aluminum (Al) metal layer 108 deposited through an evaporation process. (To be published with Fig. 1)

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025
(21) Application No.202511035729 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "A SYSTEM FOR MICROSCOPIC ANALYSIS OF FILIFORM LEAVES"

(51) International classification	:G01N0015140000, H01L0033500000, G02B0021360000, H05B0045325000, G06V0010940000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a system for microscopic analysis of filiform leaves, comprising: (i) a user based device equipped with a microscopic extension, adapted to capture high-resolution images of filiform leaf specimens placed on a platform; (ii) a zoom and focus adjustment mechanism operatively connected to the microscopic extension, configured to enable precise focal adjustments for enhancing image clarity; (iii) an illumination system comprising a plurality of light sources including a Red LED (Light Emitting Diode), a White LED, and a Near-UV LED; (iv) a power supply and switching unit operatively connected to the illumination system, the unit comprising a set of switches (S1, S2, S3) for selective activation of each LED independently or in combination; (v) an image processing unit configured to receive images from the mobile phone, and perform feature extraction and classification based on spectral and texture parameters; (vi) a decision-making system operatively connected to the image processing unit, configured to classify the leaf specimen as healthy or affected by specific conditions based on the extracted features.
Fig 1 to 9

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035736 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A THERAPEUTIC FRAMEWORK FOR FERTILITY ENHANCEMENT THROUGH AYURVEDIC ASTROLOGY, YOGA, PRANAYAMA, MEDITATION, AND AYURVEDIC PROTOCOLS (SHRIMAN AYPMA)

(51) International classification	:A61K0036810000, A61K0036906600, A61P0015080000, A61B0005000000, G16H0050300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention, titled Shriman AYPMA, relates to an integrated therapeutic system that integrates Ayurvedic Astrology, Yoga, Pranayama (breath regulation), Meditation, and Ayurveda to provide personalized fertility-enhancing and remedial wellness solutions. According to the planets at the moment of birth and current transit, the current invention uses Ayurvedic Astrology to determine what health issues might arise. It then recommends proper yoga, meditation, pranayma (breathing exercises), and the use of appropriate Ayurvedic medications. The system recommends Shriman Yoga poses such as Bridge, Cobra, Seated Forward Fold, and Garland may be helpful for infertility if practiced slowly and gently. The next step, the system suggests that Shriman Pranayaman/Breathing may help manage the symptoms of infertility associated with PCOS (Polycystic Ovary Syndrome) in women (polycystic ovary and irregular menstrual cycle) and Teratozoospermia in men (abnormal sperm morphology). Further, system recommends Shriman Meditation helps to relax and release toxic thoughts and past patterns of pain, insecurity and grief. Finally, system recommendation dosage of Ashwagandha, Shilajeeth, Shatavari, Los Bhasm, Moti Bhasm, Swarna Bhasm, Putrajiva, Shivlingi beej to reduce the infertility. Through the synergy of these five ancient sciences, the Shriman AYPMA system presents a holistic, individualized, and non-invasive method for eliminating the infertility issues.

No. of Pages : 26 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025

(21) Application No.202511035738 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN AUTONOMOUS WATER SURFACE CLEANING ROBOT

(51) International classification :E02B0015100000, B25J0009160000, F21S0009030000, B63B0035320000, G06V0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an autonomous water surface cleaning robot(100) powered by solar power. The system of the present invention includes a main frame(102), a motor(114), a conveyor belt motor(118), a rechargeable battery pack(120), a computing unit(122) and a user device(128). The main frame(102) structure is designed to float and maintain stability in water. The main frame(102) includes a solar panel(104), a sensor(106), a conveyor belt(108). The solar panel(104) is mounted on the main frame(102). The solar panel(104) provides power to the robot(100). The sensor(106) detects obstacles and floating debris ensuring precise navigation and effective cleaning. The computing unit(122) includes a memory unit(124) and a processor unit(126). The memory unit(124) stores instructions and data of the sensor(106). The processor unit(126) runs the instructions and data of the sensor(106) to implement functions of the robot(100). The user can control functions of the robot(100) with the user device(128).

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025

(21) Application No.202511035739 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : LOW LIGHT IMAGE ENHANCEMENT SYSTEM FOR FORENSIC ANALYSIS

(51) International classification :G06T0005920000, G06T0005400000, G06T0005500000, G06T0005940000, G06F0021320000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a system (100) for enhancement of a low light image. The system (100) includes an image acquisition unit (102) configured to provide a low light image from a storage unit (110), a processing unit (104) configured to process the low light image to an enhanced image by a Depth Aware GAN-infused Network (DAGNet) architecture, and a display unit (106) configured to display the low light image and the enhanced image side by side for comparative analysis. The system delivers fast, reliable, and detail-rich enhancements in the image that meet the stringent demands of forensic analysis, significantly improving the visibility and quality of images captured under poor illumination without introducing artefacts, losing critical information, or requiring impractical computational setup.

No. of Pages : 28 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035740 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SHRIMAN AYPMA: AN INTEGRATIVE APPROACH TO STRESS, ANXIETY, AND DEPRESSION THROUGH AYURVEDIC ASTROLOGY, YOGA, PRANAYAMA, MEDITATION, AND AYURVEDA

(51) International classification	:A61B0005160000, A61K0036810000, G16H0020700000, A61M0021000000, A61P0025220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The rise in stress, anxiety, and depression has led to an increasing demand for holistic and integrative mental wellness approaches. The present invention introduces an insightful framework known as Shriman AYPMA (Ayurvedic Astrology, Yoga, Pranayama/Breathing, Meditation, and Ayurveda), which integrates five ancient sciences that have supported human well-being for millennia. This system utilizes Ayurvedic Astrology in analyzing astrological charts—particularly combinations such as Saturn and Moon—to identify likely mental health vulnerabilities. Depending upon this determination, the system proposes an individual Yogic approach towards mental health. For diseases like stress, worry, and melancholy, Shriman Yoga is recommended slowly and gently.Certain poses, like Cat-Cow Pose, Reclining Bound Angle Pose, and Child's Pose, are done with conscious slowness and awareness to achieve maximum therapeutic effects. The system also includes Shriman Pranayama, a slow and deep breathing method that focuses on prolonged exhalation and spontaneous inhalation, which reduces symptoms of stress, anxiety, and depression. As a follow-up, Shriman Meditation leads one through levels of consciousness—relaxation and subconsciousness to superconsciousness—enabling profound mental healing and expulsion of negative thoughts, trauma, and sorrow. Lastly, Shriman Ayurveda advises the careful, low-dose application of herbs like Ashwagandha, Brahmi, Gotu Kola, and Shankhpushpi. Instead of combining all herbs, the system prescribes beginning with one herb in the lowest dose that is effective to correspond to the sensitivity of the person's mental state. Through the synergy of these five ancient sciences, the Shriman AYPMA system presents a holistic, individualized, and non-invasive method for restoring emotional and mental health.

No. of Pages : 20 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025
(21) Application No.202511035764 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SHRIMAN AYPMA: A MULTIDISCIPLINARY VEDIC APPROACH TO PREVENT AND MANAGE HEART DISEASE

(51) International classification :A61K0036810000, A61K0036185000, A61B0005021000, A61K0036484000, A61M0021000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a multidisciplinary Vedic approach to prevent and manage heart disease. The multidisciplinary Vedic approach referred to" Shriman AYPMA (Ayurvedic Astrology, Yoga, Pranayama/Breathing, Meditation, and Ayurveda), which integrates five ancient sciences that have guided humanity toward holistic well-being for millennia. The Vedic approach utilizes Ayurvedic Astrology in analyzing astrological chartsparticularly combinations such as Saturn and Mars- to identify potential vulnerabilities to high blood pressure and artery blockage. Depending upon this determination, the Vedic approach proposes the right kind of Yoga. For individuals with low blood pressure, dynamic or fastpaced yoga poses such as Downward-Facing Dog and Bridge Pose may be beneficial. Conversely, for those with high blood pressure, slower, calming poses like Child's Pose and Cat-Cow Pose can be helpful. The system also includes Shriman Pranayama, recommending fast breathing techniques such as Kapalbhati (forceful exhalation) for low blood pressure, while slow alternate nostril breathing is suggested for high blood pressure. As a follow-up, Shriman Meditation individuals with low blood pressure may benefit from active meditation involving sound and kirtan, whereas those with high blood pressure may find relief through Yoga Nidra (yogic sleep or deep relaxation)." Lastly, Shriman Ayurveda recommends the careful, low-dose use of herbs—such as Ashwagandha and Licorice to support salt retention in cases of low blood pressure, and Terminalia Arjuna and Rauwolfia Serpentina for managing high blood pressure. Through the synergy of these five ancient sciences, the Shriman AYPMA system offers a holistic, personalized, and non-invasive approach to enhancing both physical and mental well-being.

No. of Pages : 23 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035794 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANALGESIC ACTIVITY OF ETHANOLIC ROOT EXTRACT OF AMARANTHUS CAUDATUS

(51) International classification	:A61K0036210000, A61K0036810000, A61K0009000000, A61K0031135000, A61K0036185000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention relates to the development of a herbal analgesic composition using the ethanolic root extract of Amaranthus caudatus. The roots were collected, dried, powdered, and subjected to Soxhlet extraction with 95% ethanol to obtain a concentrated extract. Acute oral toxicity studies confirmed the safety of the extract up to 2000?mg/kg body weight, as per OECD guideline 420. Based on this, two safe oral dose levels (200?mg/kg and 400?mg/kg) were selected for pharmacological evaluation. The invention provides a plant-based, non-toxic alternative to conventional analgesics, with potential for development into safe and effective herbal pain-relief formulations.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025
(21) Application No.202511035795 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN AUTOMATED ELECTROMAGNETIC BALL BALANCING SYSTEM

(51) International classification	:G06F0003030000, B33Y0030000000, G06F0009500000, H01L0021680000, G06F0003010000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Described herein system for automated monitoring and regulation of a ball balancer mechanism. The system includes a balancing platform (7) configured to support and allow movement of a ball (2) along an X-Y coordinate plane. A camera (1) is positioned above the balancing platform (7) to capture real-time images of the ball (2) on the balancing platform (7) and transmit the captured images to a ball tracking unit. An electromagnet driver (4) is electrically connected to a first electromagnet (5) positioned along X-axis of the X-Y coordinate plane and a second electromagnet (6) positioned along Y-axis of the X-Y coordinate plane, the first and second electromagnets (5,6) are configured to generate electromagnetic forces that adjust tilt of the balancing platform (7). The adjustment of tilt of the balancing platform (7) stabilizes the ball (2) at a desired position on the balancing platform (7) in real-time.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035825 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : THE REUSABLE SHAGUN ENVELOPE

(51) International classification	:B65D0027040000, A61F0013490000, B65D0001020000, C03C0017340000, G06Q0050000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention related to a reusable Shagun envelope created for sustainable and cost-effective gift-giving. It includes a name display area featuring either a disappearing/thermal paper mechanism or a transparent strip holder with replaceable name strips. This enables multiple users to utilize the same envelope without permanent markings, thereby reducing paper wastage. The envelope retains its traditional aesthetic appeal while promoting sustainability.

No. of Pages : 12 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035826 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ANDROGRAPHOLIDE BASED NEUROPROTECTIVE FORMULATION AND METHOD FOR MITIGATING ALUMINIUM CHLORIDE-INDUCED NEUROTOXICITY

(51) International classification :A61P0025000000, A61P0025280000, A61K0031365000, A61P0009100000, A23K0050800000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a neuroprotective composition and therapeutic method involving andrographolide for effectively mitigating aluminium chloride-induced neurotoxicity, cognitive impairment, and neuroinflammation. Administered orally at 1-3 mg/kg, andrographolide significantly improves spatial memory, reduces oxidative stress markers, enhances antioxidant enzyme levels, and substantially inhibits NF?B activation within neuronal tissues. Histopathological evidence corroborates the neuroprotective effect, indicating andrographolide's therapeutic potential against aluminium chloride-triggered neuronal damage. The disclosed invention presents a promising natural therapeutic approach for counteracting neurodegenerative conditions linked to aluminium exposure.

No. of Pages : 27 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2025

(21) Application No.202511035827 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NEUROPROTECTIVE ACTION OF HORDENINE AGAINST ALUMINIUM CHLORIDE-INDUCED ALZHEIMER'S DISEASE

(51) International classification	:A61P0025280000, A61K0031137000, A61P0025000000, A61P0039060000, A61K0036906600
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses a novel neuroprotective application of hordenine against cognitive dysfunction and neurodegeneration resulting from aluminium chloride (AlCl3)-induced Alzheimer's disease. Administration of hordenine markedly improves memory and cognitive function, reduces neuroinflammation and oxidative stress markers including acetylcholinesterase (AChE), TNF-a, IL-1ß, NF-?B, and lipid peroxidation, and significantly increases antioxidant enzyme levels (glutathione, catalase, superoxide dismutase). Histopathological evaluations further demonstrate preserved neuronal architecture in cortical and hippocampal tissues. Thus, hordenine offers promising therapeutic potential for the treatment and management of Alzheimer's disease related to aluminium exposure.

No. of Pages : 27 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/04/2025

(21) Application No.202511035852 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADVANCED MACHINE LEARNING TECHNIQUES FOR PREDICTING T20 CRICKET MATCH WINNERS

(51) International classification	:A63F0013828000, G06N0003045000, A63B0102200000, G06N0003080000, G06F0003010000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides an AI-driven system for predicting the winner of T20 cricket matches, specifically focusing on the Indian Premier League (IPL) and similar leagues. The system integrates historical match data, real-time statistics, player performance metrics, and environmental conditions to generate dynamic win probabilities. It employs deep learning, reinforcement learning, and ensemble methods to enhance prediction accuracy, offering real-time updates for teams, analysts, fantasy sports users, and broadcasters. The invention significantly improves decision-making in cricket strategy formulation and enhances user engagement through AI-powered match insights.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/04/2025
(21) Application No.202511035862 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AGRICULTURE CROP IDENTIFICATION AND DISEASE PREDICTION THROUGH DRONE MECHANISM

(51) International classification :G16H0050200000, G06V0010820000, G06Q0050020000, G06N0003080000, A01B0079000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention described under the title “System and Method for Agriculture Crop Identification and Disease Prediction Through Drone Technology” provides a novel concept in the field of precision agriculture. This system uses drones together with enhanced imaging and artificial intelligent algorithms to recognize crops varieties and recognize diseases on early stages. Loaded with multi-spectral and thermal optics, the drone takes visible high definition image of the agricultural field. This captured data is then analysed by an automated cloud based system that has been developed to use the learned models in artificial intelligence and this has been gifted with large data set of crop and disease characteristics. The system is designed to distinguish between crop types where it classifies the plants based on the pattern and the feature of the plant at the same time it is also identifying diseases that may be present in the plant such as discoloration of the plant texture, and temperature fluctuations in the foliage. The processed data is geo-tagged and made available in an easy to use feature for farmers to view information in real-time. The method can increase efficiency by increasing the rarity of manual inspection and permitting intervention where needed, for example to apply pesticide or fertilizer. Speaking of the proposed system, its objective is to enhance utilization of the available resources, increase the crop yields, and minimize losses resulting from unanticipated crop diseases. Large scale production businesses in agriculture are particularly vulnerable to these conditions but this technology can help agriculture by detecting the conditions early enough and recommending the right action.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202511034146 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT CROP CLASSIFICATION SYSTEM

(51) International classification	:G06Q0050020000, G06N0020000000, A01G0025160000, G06Q0010040000, A01G0009240000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to an intelligent crop categorization and farming system that combines advanced sensor technology, machine learning, and IoT to maximize contemporary farming. The system utilizes soil fertility sensors, weather forecasting models, and autonomous plowing and irrigation systems to maximize precision farming. Real-time soil analysis, moisture management, and monitoring of crop health are enabled through AI-based decision-making and multispectral imaging sensors. The system utilizes TinyML-based algorithms for crop classification, yield estimation, and environmental adaptation, with efficient use of resources and minimal human intervention. A cloud-based IoT platform facilitates remote monitoring through a mobile app, with real-time alerts, suggestions, and predictive insights. Through automated irrigation, AI-based pest detection, and adaptive learning, the system enhances crop yield, lowers operational expenses, and increases climate resilience. The invention presents a sustainable, smart, and automated method to contemporary agriculture that guarantees high output and environmentally friendly farming.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035895 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FEDERATED LEARNING-ENABLED PRIVACY-PRESERVING DATA ANALYTICS FRAMEWORK

(51) International classification :G06F0021620000, H04L0009000000, H04L0009080000, G06F0021600000, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a federated learning-based privacy-preserving data analytics framework that integrates specialized hardware components, including on-device encryption modules, secure enclaves, cryptographic engines, and hardware-optimized AI accelerators, to enable robust local training, secure update aggregation, and efficient encryption. The system applies differential privacy, secure multi-party computation, and homomorphic encryption to uphold data confidentiality while generating a global model, without transferring raw data. By keeping local data at distributed endpoints, the framework preserves privacy, making it suitable for sensitive domains like healthcare and finance. The hardware-centric approach significantly enhances performance, scalability, and protection against adversarial threats. Accompanied Drawing [FIG. 1]

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/04/2025

(21) Application No.202511035896 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED LEAF DISEASE DETECTION SYSTEM USING ENSEMBLE DEEP LEARNING AND REAL-TIME WEB APPLICATION

(51) International classification	:G06N0003045000, G06N0003080000, G16H0050200000, G06F0018250000, H04L0009400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-based system for real-time detection and diagnosis of plant leaf diseases using ensemble deep learning and a web-enabled inference interface. The system integrates RGB and multispectral imaging devices with IoT-enabled microcontrollers and edge computing platforms for field-level image capture and preprocessing. An ensemble of convolutional neural networks, including VGG16, ResNet50, and InceptionV3, performs disease classification with high accuracy. The system supports real-time decision-making through a cloud-hosted or local Flask-based web application, which provides treatment recommendations from a region-specific database or online repositories. The invention further includes environmental sensor integration, secure data communication protocols, and solar-powered field deployment options. The system addresses the limitations of manual disease detection and facilitates scalable, automated crop health monitoring for farmers in remote or resource-constrained environments. Accompanied Drawing [Fig. 1]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035897 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED SYSTEM FOR REAL-TIME SIGN LANGUAGE RECOGNITION AND COMMUNICATION ASSISTANCE

(51) International classification :G06V0040200000, G06N0003045000, G06N0003080000, G06F0003010000, G09B0021000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention discloses an AI-based system for real-time sign language recognition and communication assistance, designed to facilitate seamless interaction between hearing-impaired individuals and the general population. The system comprises a gesture input module with an HD camera and infrared depth sensors, a preprocessing unit for image enhancement, and a Convolutional Neural Network (CNN) classifier trained on a large annotated gesture dataset. The invention further includes a sentence construction module using NLP models, a predictive word suggestion engine, and a multimodal output interface capable of displaying or vocalizing translated gestures. The system supports multilingual translation, IoT integration, secure user authentication, and adaptive learning through user-specific training profiles. Deployable across embedded, mobile, and cloud platforms, the invention ensures high accuracy, low latency, and environmental robustness. Accompanied Drawing [Fig. 1]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035898 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BLOCKCHAIN-BASED DECENTRALIZED DIGITAL IDENTITY MANAGEMENT SYSTEM

(51) International classification :H04L0009320000, H04L0009400000, H04L0009000000, G06Q0020360000, H04L0009080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a hardware-based blockchain architecture for decentralized digital identity management. A specialized blockchain node device, equipped with tamper-proof memory and hardware-accelerated cryptographic modules, ensures secure storage and immutable tracking of identity data. A user identity interface device, featuring a secure microcontroller and digital wallet hardware, enables creation and selective disclosure of credentials. Credential issuance and verification server nodes leverage hardware-based encryption to issue, store, and verify cryptographically signed credentials. Zero-knowledge proofs allow attributes to be verified without revealing sensitive data. The system ensures self-sovereignty by empowering users to control and update credentials, with blockchain consensus guaranteeing record integrity. Accompanied Drawing [FIG. 1]

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035899 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : 5G-ENABLED AI-BASED TRAFFIC MANAGEMENT SYSTEM FOR SMART CITIES

(51) International classification :G08G0001010000, H04W0004400000, H04L0067120000, H04W0004440000, H04L0067100000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a 5G-Enabled AI-Based Traffic Management System for Smart Cities. The present invention comprises a plurality of IoT sensors including smart cameras, LiDAR, radar, and environmental sensors deployed across urban traffic infrastructure, configured to collect real-time data on vehicle count, speed, road conditions, and environmental parameters, a 5G communication module enabling ultra-low latency and high-speed data transmission between the IoT sensors, edge computing nodes, connected vehicles, and a central control system. One or more edge computing nodes operatively connected to the 5G network, configured to perform real-time data preprocessing, noise filtering, and initial analytics to reduce cloud processing load, a V2X communication module enabling bidirectional communication between vehicles and traffic infrastructure for real-time updates on traffic conditions, collision avoidance, and emergency vehicle priority. A data analytics platform integrated with the central control system for comprehensive data visualization, historical trend analysis, and decision support. Accompanied Drawing [FIG. 1]

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035900 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : LOW-CODE NLP-BASED SYSTEM FOR AUTOMATED SOLIDITY SMART CONTRACT GENERATION AND WORKING METHOD THEREOF

(51) International classification :H04L0009000000, G06F0040205000, G06N0020000000, H04L0009320000, G06F0008380000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a low-code NLP-based system for automated Solidity smart contract generation and deployment. The system comprises a user interface that accepts natural language inputs, an advanced NLP module to extract structured contract parameters, and a dynamic templating engine that maps these parameters onto pre-defined Solidity templates. Additionally, a blockchain deployment module facilitates one-click contract deployment, while integrated validation and error-handling modules ensure real-time syntax and security checks. This invention significantly simplifies smart contract creation, eliminating the need for deep programming expertise and thereby democratizing blockchain technology for both developers and non-developers. Accompanied Drawing [Fig. 1]

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035901 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FLOWER-SHAPED WLAN ANTENNA WITH DEFECTED GROUND STRUCTURE FOR ENHANCED BANDWIDTH AND EFFICIENCY

(51) International classification	:H01Q0009040000, H03F0001020000, H01Q0001380000, H01Q0013020000, H01Q0001480000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention discloses a novel flower-shaped WLAN antenna with a defected ground structure is disclosed, offering a wide operational bandwidth of approximately 2.25–2.6 GHz and a peak gain of 4.5 dBi at 2.4 GHz. The multi-petal radiating patch increases electrical length, while strategic ground-plane cuts enhance impedance matching and achieve about 95.5% radiation efficiency. Integrated low-noise and power amplifiers boost signal quality, and a high-speed switching matrix, guided by real-time monitoring, dynamically adjusts matching networks. An AI-enabled signal processing unit further optimizes performance by analyzing interference and traffic conditions. This design delivers robust connectivity for IoT applications and AI-driven systems . Accompanied Drawing [Figs. 1-2]

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/04/2025

(21) Application No.202511035903 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : REAL-TIME GESTURE-BASED VIRTUAL PAINTING SYSTEM AND WORKING METHOD THEREOF

(51) International classification	:G06F0003010000, G06N0020000000, G06F0009380000, G16H0030200000, G06V0010560000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a real-time gesture-based virtual painting system and working method that transforms conventional art creation into an interactive digital experience. It integrates a high-speed camera, structured-light depth sensor, LiDAR, and infrared sensor with a high-performance microcontroller and dedicated AI processing unit, enabling accurate capture and interpretation of nuanced hand gestures. Advanced machine learning algorithms and sensor fusion techniques facilitate real-time rendering of virtual brush strokes on a digital canvas. IoT connectivity enables secure remote diagnostics, cloud-based firmware updates, and continuous adaptive learning, ensuring robust performance under diverse environmental conditions. This cost-effective and accessible system enhances user interaction with multisensory feedback devices and is particularly advantageous for applications in education, gaming, and rehabilitation. Accompanied Drawing [Figs. 1-4]

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/04/2025
(21) Application No.202511035904 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR IDENTIFYING AND TREATING LEAF DISEASES USING EDGE-BASED SEGMENTATION

(51) International classification	:G06N0003045000, G06V0010820000, G06V0020100000, G06T0007110000, G06V0010260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses a system and method for rapidly identifying and treating leaf diseases, including rust and scab, using edge-based segmentation. By combining specialized hardware—comprising a high-resolution sensor array, microcontroller, and edge-computing module featuring convolutional neural networks—and advanced image-processing steps such as canny-edge detection, the system accurately isolates diseased leaf regions in real time. The IoT gateway transmits relevant data to the cloud for further analysis, while an autonomous actuation sub-module, integrated on drones or robots, dispenses targeted chemical or biological agents to infected areas. This integrated approach ensures minimal latency, reduced chemical usage, and improved crop yields, addressing key limitations in existing plant disease detection solutions. Accompanied Drawing [Figs. 1-3]

No. of Pages : 28 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2025
(21) Application No.202511034641 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : VOLTAGE STABILITY ASSESSMENT AND ENHANCEMENT OF POWER GRID AND WIND ENERGY PENETRATION

(51) International classification	:H02J0003380000, F03D0013200000, F03D0080000000, G06Q0050060000, H02M0001120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
With the growing integration of wind power into global energy systems, understanding its impact on system dynamics and stability has become increasingly important. Unlike conventional power generators, wind generators exhibit unique characteristics, including variability, limited predictability, and reduced adaptability to traditional power transformers. These factors can lead to partial dissipation of electrical energy and interruptions in power supply. As a result, wind generation poses potential challenges to the stability of existing power networks, particularly in terms of voltage stability, frequency response, and rotor angle stability. A critical review of the existing literature reveals notable research gaps in understanding and managing these stability issues, especially in systems with high wind power penetration. This study addresses these gaps by focusing on the distinct influence of wind generators on electrical network stability, aiming to contribute to the development of more robust and resilient power systems capable of supporting the increasing share of renewable energy.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/04/2025

(21) Application No.202511036742 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A STUDENT ACADEMIC AND COMMUNICATION MANAGEMENT

(51) International classification	:G06Q0050200000, G09B0007000000, G09B0007020000, G06F0016160000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A student academic and communication management system, the system (100) comprises a user interface (102) installed within a computing unit (104), wherein the computing unit (104) is accessed by students to provide one or more input and at least one processor (106) operationally coupled with the computing unit (104), wherein the at least one processor (106) is configured to receive and analyse the one or more input, collect high-quality academic resources, including previous year questions and notes, through cooperation with professors and senior students, based on the one or more input, conduct a beta launch with a select group of students to gather initial feedback and suggestions for platform improvement and collect continuous feedback to allows users to provide opinions, suggestions, and feature requests to ensure platform evolves according to user needs.

No. of Pages : 13 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/04/2025

(21) Application No.202511035905 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SELF-ADAPTIVE CYBERSECURITY FRAMEWORK USING AI FOR THREAT DETECTION AND MITIGATION

(51) International classification	:H04L0009400000, G06N0020000000, G06F0021550000, H04W0012122000, G06F0021560000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention relates to a hardware-based self-adaptive cybersecurity framework utilizing AI for real-time threat detection and mitigation. A data collection module gathers security data, which is analyzed by an AI model leveraging specialized hardware resources. This AI model continuously refines its parameters through feedback loops and threat intelligence feeds, enabling rapid adaptation to evolving threats. A dedicated threat mitigation engine automatically isolates compromised systems, blocks malicious traffic, and adjusts system configurations. A context-aware module tailors detection thresholds and mitigation actions based on operational conditions. Performance metrics are stored and analyzed in real time, closing the feedback loop to continually improve future responses. By integrating AI-driven analytics with hardware-level controls, the framework provides an efficient and proactive defense against both known and unknown cyberattacks. Accompanied Drawing [FIG. 1]

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025
(21) Application No.202511035473 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR ELIMINATING ELECTROMAGNETIC RADIATION FROM ELECTRONIC DEVICES

(51) International classification	:H04B0010250000, H04B0010564000, H04B0010800000, H04N0007220000, G02B0006420000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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1)Prof. (Dr) Jagdev Singh Rana
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(57) Abstract :
The present invention relates to a system for eliminating electromagnetic radiation from electronic devices by replacing conventional electron-based signal transmission with photon-based optical transmission. The system comprises a transmitter that converts electrical signals into optical signals using a laser diode or LED, fiber optic cables that guide the optical signals, and a receiver with a photodiode that reconverts optical signals into electrical form. Optical amplifiers and repeaters are integrated for long-distance signal transmission without electrical reconversion. By employing photons as the fundamental transmission medium inside CPUs, motherboards, and other circuits, the invention eliminates electromagnetic field generation, enhances data transmission speed, reduces heat generation, and improves device longevity. The invention provides an eco-friendly and health-conscious solution suitable for a wide range of electronic applications, including computing, communication, and control systems.

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/04/2025

(21) Application No.202511035481 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TRANSDERMAL PATHCHES CONTAINING NSAIDS DRUGS

(51) International classification :A61K0009700000, A61K0009200000, A61P0029000000, A61K0009510000, A61K0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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3)Mr. Adnan
4)Ms. Aditi Singhal
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Address of Applicant : NA
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(57) Abstract :
The present invention discloses a transdermal patch containing two medications, ibuprofen and aspirin, which has a simultaneous release pattern without interfering with one another's release and that it primarily relieves chronic pain related to skeletal-muscular conditions like rheumatoid arthritis. This work used the solvent evaporation method to create aspirin ibuprofen Dual Trans employing a variety of polymers, including chitosan, HPMC in varied amounts, propylene glycol as a skin penetration enhancer, and polyethylene PEG 400 as a plasticizer. In addition to being taken for research on skin irritation, in vitro release kinetics, and invitro penetration, the produced patches were assessed for thickness, weight variation, folding durability, moisture content, and drug content homogeneity.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202517033913 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BLADE IMPELLER AND WIND POWER GENERATION DEVICE

(51) International classification :F03D 1/06
(31) Priority Document No :202211530876.8
(32) Priority Date :01/12/2022
(33) Name of priority country :----------
(86) International Application No :PCT/CN2023/121223
Filing Date :25/09/2023
(87) International Publication No :WO 2024/114063
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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Address of Applicant :9th Floor Block C Building B6 Dongsheng Technology Park No. 66 Xixiaokou Road Haidian District Beijing 100192 ---------- ----------

(57) Abstract :
A blade an impeller and a wind power generation device. The blade comprises a blade root (1) and several connecting assemblies (2) arranged at intervals. The blade root comprises an outer laying layer (11) and an inner laying layer (12) which are formed on the blade root wherein a mounting cavity is provided between the outer laying layer and the inner laying layer the mounting cavity being annular; one end of each connecting assembly is inserted into the mounting cavity and the other end thereof is adapted to be connected to a hub of a wind turbine. Each connecting assembly comprises a connecting rod (21) a connecting sleeve (22) and a limiting member (23) wherein the connecting rod is provided with a first portion (211) and a second portion (212) the first portion being mounted in the mounting cavity the second portion protruding out of the mounting cavity and being adapted to be connected to the hub of the wind turbine the connecting sleeve being sleeved on the second portion and the limiting member being arranged between adjacent connecting rods and abutting against the adjacent connecting rods. The connecting rods in the blade are connected at a position where the connecting rods are in connection with the blade root to both the blade root and the limiting members one part of loads transmitted from the blade root to the connecting rods are directly transmitted to the connecting rods and the other part of loads are transmitted to the connecting rods by means of the limiting members such that the problem of relatively low interface strength at the blade root is alleviated.

No. of Pages : 10 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/02/2024
(21) Application No.202421006709 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTING AND TRACKING OBJECTS USING A COMPUTER VISION MODEL

(51) International classification :G06T7/215, G06T7/246, G06V10/25, G06V10/40
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
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(72)**Name of Inventor :**
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(57) Abstract :
Embodiments herein provide a method for detecting and tracking objects using a Computer Vision (CV) model (112). The method includes (i) receiving media content from a user device (102), (ii) rendering the media content into one or more frames with pre-defined dimensions, (iii) enabling a user to select one or more mouse points on at least one of the one or more frames to define a Region of Interest (ROI) and line crossings along with directions, (iv) converting the one or more mouse points into coordinates, (v) identifying coordinate details of the region of interest and the line crossings along with the directions, and (vi) tracking each object in the region of interest and the line crossings along with the directions based on the coordinate details and by assigning identification numbers to each object in the at least one of the one or more frames. FIG. 6

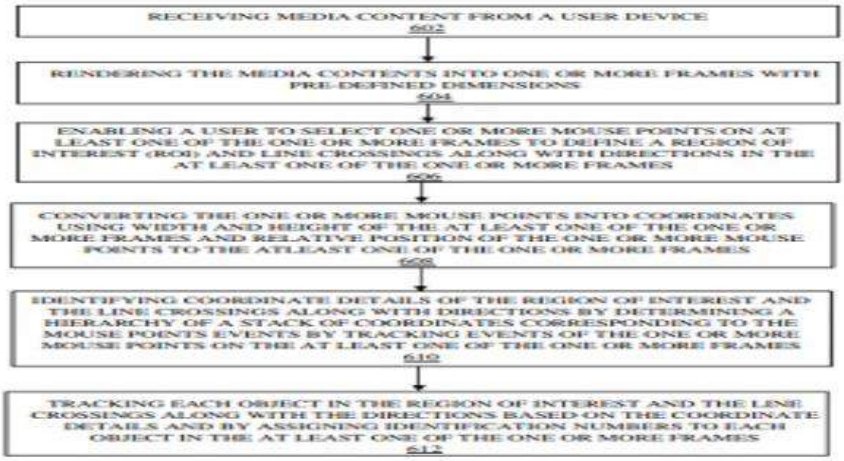

FIG. 6

No. of Pages : 43 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/02/2024
(21) Application No.202421006710 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR PERSONALIZING A COMPUTER VISION MODEL BASED ON USE CASES

(51) International classification :G06N3/08, G06T7/00, G06N3/0464
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
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(57) Abstract :
A system for personalizing a computer vision (CV) model based on use cases is provided. The method includes (i) segmenting media content received from a user device into a sequence of individual frames, (ii) extracting a first frame, (iii) providing a plurality of preference segments to the user device to enable the user to select a preference, (iv) generating an event by enabling the user to interact with the first frame using a mouse, (v) configuring the CV model automatically, (vi) converting the one or more mouse clicks performed on the first frame into coordinates, (vi) converting the input into a compatible format by processing the input of the user with every click of ‘y’ or ‘q’ by the user on the keyboard, (vii) personalizing the CV model based on use cases by crystalizing the input of the CV model to perform interpretation/prediction, upon receiving confirmation from the user. FIG. 1

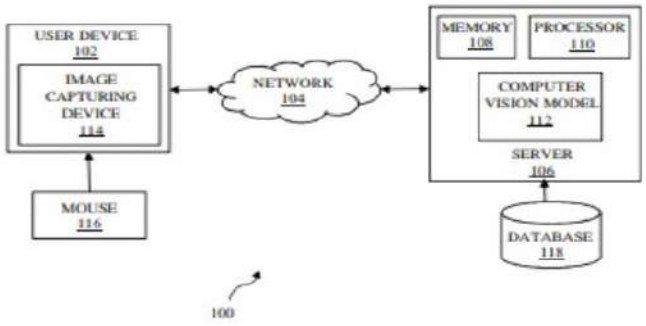

FIG. 1

No. of Pages : 34 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/03/2024
(21) Application No.202421018254 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “FULLY AUTONOMOUS AI POWERED MICRO-FARM GROWPOD SYSTEM”

(51) International classification :G06Q50/02, A01G9/24, A01G25/16, H04L67/12, G06Q10/06, H04W4/38
(86) International Application No :NA
Filing Date :NA
(87) International Publication No: NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a fully Autonomous AI-powered Micro-Farm Growpod system comprising high pressure inlet water tubes (103), nozzles, vertical growing trays (102)/racks/chambers(101), outlet tubes (303), central reservoir tank (105), rule engine integrating Artificial Intelligence, and precise automation, establishing an optimal environment through state-of-the-art LED lighting (104) and centralized water and nutrient reservoirs (105) with an increased adaptability by customizable vertical trays (102) and a network of internal valves for intelligent irrigation. Further, facilitating cloud connectivity, remote monitoring, active air purification and an intelligent control system incorporating environmental sensors, providing real-time feedback on pH, TDS, air temperature, humidity, water levels, and ambient air conditions. Furthermore, providing an ecosystem that offers a plug-and-play solution with robust materials, ensuring longevity in various environments.

Figure 1

No. of Pages : 34 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/05/2024
(21) Application No.202421036885 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SINGLE PIECE PLUGLESS FLIP TOP CLOSURE ASSEMBLY

(51) International classification	:B65D0047080000, B65D0051160000, A47G0019220000, B65D0039000000, B65D0051220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A single-piece, plug-less flip-top leakage-proof dispensing closure assembly (100) for glass container (85) is disclosed. The said closure assembly (100) comprises of a body (10), lid (15), hinge (20), top-deck portion (25), spout (30), sealing collar (35), sealing wad (40), finger recess area (45), peripheral skirt (50), cylindrical rim (55), spud (60), opening (65) and cavity (70). The bottom portion of the top-deck portion (25) houses the sealing wad (40) inside the sealing collar (35) which provides an in-built plug-like functionality for sealing an inner diameter (Fd) of the neck (80) of the container (85) as well as for dispensing the content from the container (85). Thus, a conventional two-piece flip-top closure converts to a single-piece, plug-less flip-top closure assembly for sealing as well as for dispensing the content from the container (85).

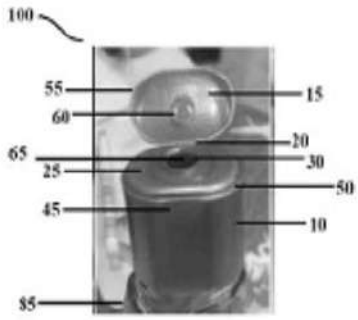

Figure 1A

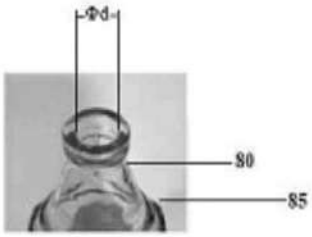

Figure 1B

No. of Pages : 23 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/04/2024
(21) Application No.202421033165 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NOVEL CASHEW NUT SHELL LIQUID-DERIVED ABSORBENT FOR INDUSTRIAL ACIDIC GAS REMOVAL

(51) International classification :B01D0053140000, B01J0023600000, C09K0011060000, B01J0023800000, G16H0050500000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A NOVEL CASHEW NUT SHELL LIQUID-DERIVED ABSORBENT FOR INDUSTRIAL ACIDIC GAS REMOVAL The present invention relates to an absorbent composition derived from cashew-nut shells for the removal of acidic compounds from industrial gases, the absorbent comprising amino groups attached to carbon atoms and hydrocarbyl substituents with fifteen carbon atoms. The invention further relates to a method for preparing the absorbent composition derived from cashew-nut shells for the removal of acidic compounds from industrial gases, said method comprising: (a) pulverizing cashew nut shells to obtain a homogenous powder; (b) extracting cardanol from the powder using methanol as a solvent; and (c) synthesizing a cardanol-based Mannich bio-solvent by reacting cardanol with an aldehyde compound and an organic poly-based diamine. Refer Figure 1

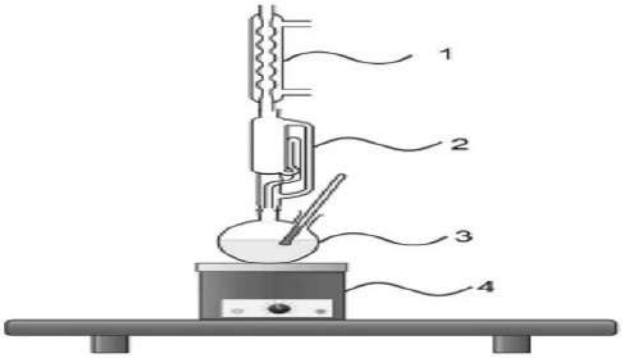

FIG: 1

No. of Pages : 20 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/08/2024
(21) Application No.202421064987 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TRACTION CONTROL DEVICE FOR ELECTRIC VEHICLE(S)

(51) International classification :B60L0015200000, B60L0003100000, B60W0030180000, B60L0007180000, B60L0007260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT TRACTION CONTROL DEVICE FOR ELECTRIC VEHICLE(S) The present disclosure describes a traction system (100) for an electric vehicle. The traction system (100) comprises an electric motor (102) operatively coupled to drive wheels (108) of the electric vehicle, a slippage detection unit (104) configured to detect an onset of slippage of the wheels of the electric vehicle, and a traction control unit (106) configured to dynamically modulate a regenerative torque and a driving torque between the electric motor (102) and the wheels (108) in response to the detected slippage. FIG. 1

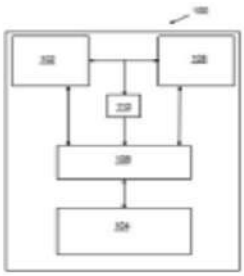

FIG. 1

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/08/2024
(21) Application No.202421064988 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ARRANGEMENT FOR DETERMINING ROTOR POSITION OF MOTOR

(51) International classification	:H02P0021180000, H02P0006160000, H02P0006200000, H02P0006240000, H02K0029080000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ARRANGEMENT FOR DETERMINING ROTOR POSITION OF MOTOR The present disclosure describes an arrangement (100) for determining rotor position of a Permanent Magnet Synchronous Motor (PMSM). The arrangement (100) comprises a traction inverter (102), a permanent magnet synchronous motor (104) comprising a rotor (104a), a motor control unit (106) comprising a processing module (108), and a position sensor (110) configured to determine change in position of rotor magnets with respect to the position sensor, to determine the rotor position. FIG. 1

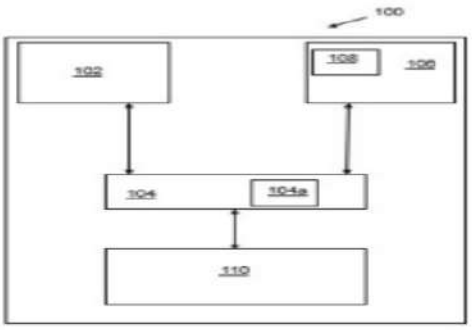

FIG. 1

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/08/2024
(21) Application No.202421064989 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ARRANGEMENT FOR DETERMINING ROTOR POSITION OF MOTOR

(51) International classification	:H02P0021180000, H02P0021140000, H02P0021000000, H02P0021220000, H02P0006200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ARRANGEMENT FOR DETERMINING ROTOR POSITION OF MOTOR The present disclosure describes an arrangement (100) for determining rotor speed of a Permanent Magnet Synchronous Motor (PMSM). The arrangement (100) comprises a traction inverter (102), a permanent magnet synchronous motor (104) comprising a rotor (104a), a motor control unit (106) comprising a processing module (108), and a speed sensor (110) configured to determine change in speed of rotor magnets with respect to the speed sensor, to determine the rotor speed. FIG. 1

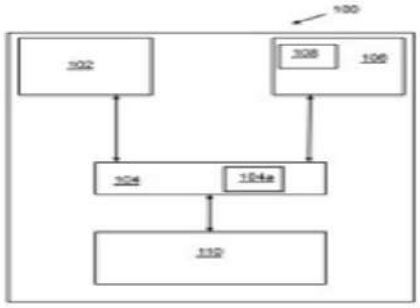

FIG. 1

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/08/2024
(21) Application No.202421064990 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ROTOR ASSEMBLY FOR PMSR-MOTOR

(51) International classification :H02K0001276000, H02K0001300000, H02K0001240000, H02K0015020000, F04D0019040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT ROTOR ASSEMBLY FOR PMSR-MOTOR The present disclosure describes a rotor assembly (100) of a Permanent Magnet Synchronous Reluctance Motor (PMSRM), wherein the rotor assembly (100) comprises a rotor shaft (102), a rotor core (104) mounted on the rotor shaft (102), at least one spacer spring (106) mounted on the rotor shaft (102) along with the rotor core (104) wherein the at least one spacer spring (106) is configured to restrict axial movement of the rotor core (104) on the rotor shaft (102). Figure 1

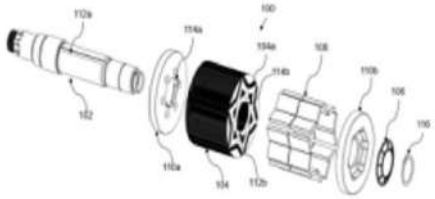

FIG. 1

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/11/2024

(21) Application No.202421085523 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Plant leaf and pesticides based disease detection using Machine Learning

(51) International classification :G06N3/08, G06Q50/02, G06T7/00, G06N20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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6)Prof. Akshaya A.Morey
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9)Mr. Vikkram R
10)Ms. Suganya A
11)Dr. C.P. Prakash
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(57) Abstract :
Plant leaf and pesticides based disease detection using Machine Learning ABSTRACT Plant diseases are a severe danger to agricultural output, and they can result in large economic losses as well as environmental concerns. The purpose of this invention is to present a system that is based on machine learning and is capable of identifying plant illnesses by analyzing photographs of leaves and determining how effective pesticide treatments are. For the purpose of identifying disease symptoms, classifying them into predetermined categories, and recommending specific treatment measures, the system makes use of modern image processing techniques and supervised learning algorithms, such as convolutional neural networks (CNNs). Through the integration of disease detection with a pesticide performance assessment module, the system offers insights that can be put into action regarding the optimization of pesticide use, the reduction of environmental impact, and the improvement of crop health. A mobile and web-based interface for real-time diagnosis and recommendations is provided by the system, which was designed with accessibility and scalability in mind. An architecture that is based on the cloud is incorporated for the purpose of updating models and storing data in a centralized location. Additionally, it includes edge computing capabilities for operation in remote locations. These localization capabilities, which include language support and databases that are relevant to a region, ensure that the software is usable in a wide variety of agricultural contexts. This all-encompassing solution gives farmers the ability to implement precision agriculture practices, improves the efficiency of crop management, and contributes to sustainable farming by lowering the amount of chemicals that are used excessively and encouraging decision-making that is driven by data.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2024
(21) Application No.202421096111 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Based Emergency Response System Integrating NLP and Real-Time Image Processing

(51) International classification :G06Q 50/10, G06F 40/30, G06N 20/00, G06F 40/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
AI-Based Emergency Response System Integrating NLP and Real-Time Image Processing ABSTRACT An artificial intelligence-based emergency response system that incorporates natural language processing (NLP) and real-time image processing is the subject of the current invention. The purpose of this system is to improve emergency management and disaster response. The purpose of the system is to perform real-time detection, evaluation, and response to critical occurrences such as natural disasters, accidents, and security threats. It is designed to evaluate multimodal data, which includes textual, audio, and visual inputs. By utilizing sophisticated artificial intelligence algorithms, the system is able to automate the identification of incidents, validate data from a variety of sources, and dynamically assign resources based on the severity and urgency of the situation. Among its most important characteristics are its support for several languages, interoperability with cloud and edge computing, and capabilities for continuous learning, which have been shown to improve accuracy and flexibility. Compliance with legislation such as the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA) is ensured by ethical and privacy-compliant data management. This invention greatly improves situational awareness, decreases response times, and minimizes the impact of emergencies across a variety of domains. It does this by delivering a solution that is unified, scalable, and efficient.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/08/2024
(21) Application No.202421064991 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM FOR REMOTE DIAGNOSTICS OF VEHICLE

(51) International classification	:G07C0005080000, G07C0005000000, G06F0011070000, G06Q0030024100, H04L0067120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT METHOD AND SYSTEM FOR REMOTE DIAGNOSTICS OF VEHICLE The present disclosure describes a vehicle diagnostic system (100) configured to perform remote diagnostic of a vehicle. The vehicle diagnostic system (100) comprises a vehicle link device (102) configured to collect at least one diagnostic data of the vehicle, a server arrangement (104) configured to receive the at least one diagnostic data of the vehicle and generate at least one diagnostic information, and a terminal device (106) configured display the at least one diagnostic information of the vehicle. FIG. 1

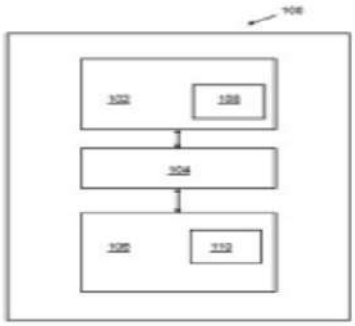

FIG. 1

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/12/2024
(21) Application No.202421096841 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR AUTOMATED FRACTURE DETECTION

(51) International classification :G06T7/00, G06N3/0464, G06V10/82, G16H50/20, G16H30/40
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides an automated system for detecting fractures in X-ray images, leveraging analytical techniques. This system is engineered to identify both significant fractures and subtle microfractures. By integrating diverse patient data, the invention enhances diagnostic accuracy and facilitates personalized assessments of fracture risk. Central to this system is a convolutional neural network (CNN) that processes the X-ray images, alongside a dual-output mechanism that generates a confidence score reflecting the likelihood of fracture presence and a risk rate that evaluates the urgency and severity of the injury. The system incorporates Grad-CAM, which visually highlights areas of interest in the X-ray images, assisting clinicians. Additionally, a real-time feedback loop allows clinicians to provide input on detection accuracy, fostering continuous improvement of the model. With a user-friendly web-based interface, this invention aims to simplify the diagnostic workflow, making advanced imaging capabilities more accessible to healthcare providers.

FIGURE 1

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/12/2024
(21) Application No.202421096849 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR INTEGRATED EYE DISEASE DETECTION AND DROWSINESS PREDICTION, AND METHOD THEREOF

(51) International classification :G06N3/08, G06N3/0464, G06N3/0442, G06V10/82, A61B3/14, G06T7/00, G16H50/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein an integrated system designed for both eye disease detection and drowsiness prediction, employing advanced deep learning models to interpret complex visual and physiological data. The high-resolution imaging techniques like optical coherence tomography (OCT) and fundus photography are utilized, combined with convolutional neural networks (CNNs), the system accurately identifies eye diseases such as glaucoma and diabetic retinopathy. For drowsiness prediction, it monitors visual cues like blink rate and eye closure patterns, analyzing them in real time with machine learning models to detect fatigue. By optimizing computational efficiency and adapting to individual behavioural patterns and environmental variations, the system ensures reliable performance across diverse demographics and settings. Its applications range from clinical diagnostics to on-road safety monitoring, offering a comprehensive solution for health and safety.

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/01/2025

(21) Application No.202521006958 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR SYNTHESIS OF AN IMIDAZOLONE DERIVATIVE

(51) International classification	:C07D0471040000, C07D0233700000, A61K0031417400, A61K0031417800, C07D0235020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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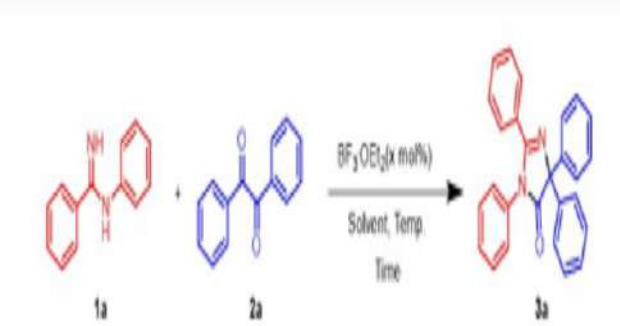
(57) Abstract :
ABSTRACT “A METHOD FOR SYNTHESIS OF AN IMIDAZOLONE DERIVATIVE” The present invention relates to a method for synthesis of an imidazole derivative. More particularly, the present invention provides a one pot synthesis of the imidazolone derivative (3) through reaction between N-phenylbenzimidamide (1) and benzil (2) in presence of boron trifluoride etherate under mild reactions conditions conducted at room temperature in a time-efficient manner. The present invention provides a simple and cost-effective approach that is metal-free and bypasses the issues of catalyst leeching, corrosion and harmful by-products. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.



No. of Pages : 77 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/01/2025
(21) Application No.202521000817 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR CLASSIFICATION AND LOCATING DEFECTS IN BLOOM/BILLET MANUFACTURED THROUGH CONTINOUS CASTING

(51) International classification :G06T0007000000, G16H0040670000, G06T0007200000, G16H0040630000, H04N0007180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT “A SYSTEM AND METHOD FOR CLASSIFICATION AND LOCATING DEFECTS IN BLOOM/BILLET MANUFACTURED THROUGH CONTINOUS CASTING” The present invention provides a system (100) for classification and locating defects in blooms/billets manufactured through continuous casting comprises an image capturing unit (1), a processing unit (2), a data storage unit (3) and an output unit (4). The image capturing unit (1) is configured to capture one or more images of a set of blooms/billets. The processing unit (2) includes a pre-processing module (5), a primary detection module (6), and a secondary detection module (7). The pre-processing module (5) performs a background subtraction operation and an image augmentation operation on the one or more images. The primary detection module (6) identifies and classifies the set of blooms/billets into defective and non-defective. The secondary detection module (7) classifies the one or more defects of the defective blooms/billets. The output unit (4) is configured to display one or more images of the defective blooms/billets along with the classified defects. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.

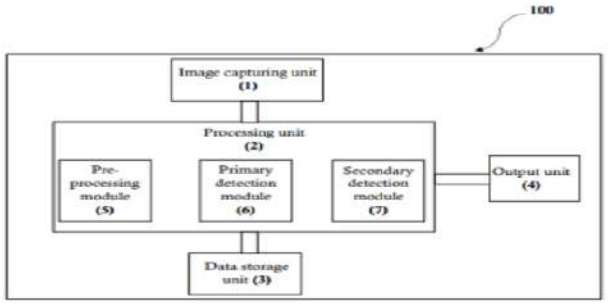

Figure 1

No. of Pages : 26 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/01/2025

(21) Application No.202521005092 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ENTERPRISE DATA INSIGHTS RETRIEVAL SYSTEM UTILIZING GRAPH DATABASES AND LARGE LANGUAGE MODELS

(51) International classification	:G06F 16/90, G06N 20/00, G06N 5/022, G06F 16/245, G06N 3/08
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention related to Enterprise Data Insights Retrieval system and method Utilizing Graph Databases and Large Language Models for generating insights from structured data. Leveraging a graph-based approach, the system models data as nodes and edges within a Neo4j knowledge graph database, enabling more flexible and accurate querying compared to traditional SQL-based methods. The system employs advanced technologies including large language models (LLMs) for semantic retrieval and Cypher query generation, dynamic few-shot learning for improved query accuracy, and Retrieval-Augmented Generation (RAG) for high-precision node and edge identification. The process begins with a user inputting a natural language query, which is processed through an API call to a backend service hosted on AWS ECS. A microservice handles the query, utilizing LLMs and dynamic few-shot learning to generate Cypher code tailored to the graph database. The Cypher code is validated and executed, retrieving relevant data and generating a final response. The system also integrates with data analysis and visualization tools such as Snowflake, Power BI, and Streamlit, allowing users to further analyze and visualize the generated insights. By optimizing data querying, retrieval, and processing, the system enhances both the accuracy of insights and the efficiency of data communication, making it a valuable tool for enterprise environments with high data processing and transfer demands. Figure 1

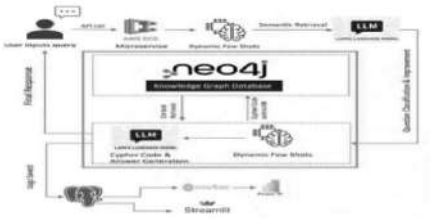

FIGURE 1

No. of Pages : 71 No. of Claims : 74

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/02/2025

(21) Application No.202521008620 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR DETECTION OF DEEPFAKE WITH PRIVACY PRESERVATION AND STYLE-BASED FEATURE EXTRACTION

(51) International classification :G06V40/16, G06N3/08, G06N3/0464
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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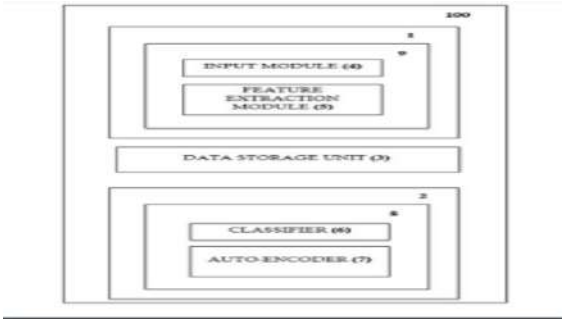
(57) Abstract :
ABSTRACT “A SYSTEM AND METHOD FOR DETECTION OF DEEPFAKE WITH PRIVACY PRESERVATION AND STYLE-BASED FEATURE EXTRACTION” The present invention provides a system (100) and a method (200) for deepfake detection in the wild with privacy preservation and style-based feature extraction. The system comprises a client side device (1), a server (2) and a data storage unit (3). The client-side device (1) is configured to concatenate extracted set of multi-layer style features layer wise from the images into feature vector and transmit the concatenated style feature vectors to the server (2). The server (2) is configured to generate a prediction indicating whether the suspicious image is a real image or a face-swapped image, compute an anomaly score based on a reconstruction error between the suspicious image and the real image feature vectors and generate a combined output of prediction and anomaly score as a weighted sum that indicates whether the suspicious image is at least one of the real image or the face-swapped image. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.



No. of Pages : 31 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/08/2024

(21) Application No.202421060352 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SEATING ARTICLE

(51) International classification	:B60N0002680000, A61G0005100000, B25J0015000000, B60K0007000000, H04R0017000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT “A SEATING ARTICLE” The present disclosure relates to a backrest sub-assembly for a seating article is disclosed. The sub-assembly includes a connecting arm, one end of the connecting arm may be pivotably connectable to a seat sub-assembly of the seating article. A backrest frame may be connectable to the connecting arm on an other end opposite to the one end and displaceable between an extended position and a retracted position. The backrest frame having a top frame portion, a bottom frame portion, at least one curved arm extending between the top frame portion and the bottom frame portion. The subassembly further includes a suspension module provided on the other end of the connecting arm opposite to the one end, the suspension module structured to connect the backrest frame and the connecting arm. The suspension module being configured to displace the backrest frame between the extended position and the retracted position relative to the connecting arm. Fig. 1 is the representative figure.

No. of Pages : 33 No. of Claims : 29

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/12/2024
(21) Application No.202421094793 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR ANALYSIS AND PREDICTING STATE OF HEART AND EYE

(51) International classification :G06T7/00, A61B5/00, G16H50/20, G06N3/08, G06N20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention introduces an innovative system that integrates early detection of heart disease and eye cataracts using a method for analyzing and offering an accessible system for early detection and preventive healthcare.

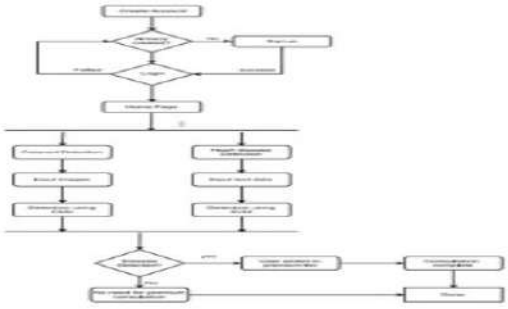

Figure 1

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/01/2025
(21) Application No.202521008089 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "A UNIVERSAL ACCESS AUTOMATED TELLER MACHINE"

(51) International classification	:G07F19/00, G06Q20/40, G06F21/32, G07C9/37
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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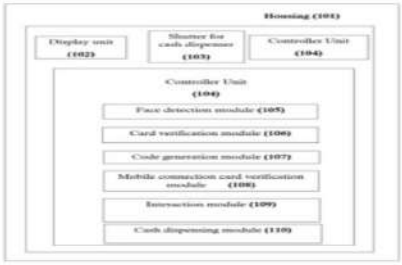
(57) Abstract :
ABSTRACT "A UNIVERSAL ACCESS AUTOMATED TELLER MACHINE" A universal access automated teller machine comprising an automated teller machine housing (101); a display unit (102); a shutter for cash dispenser (103), a controller unit (104); wherein: the controller unit (104) is configured with a face detection module, a card verification module (106), a code generation module, a mobile connection card verification module (108), an interaction module, and cash dispensing module (110), the face detection module (105) detect a user's face and transmit activation signal to the controlling unit; an automatic tilt angle adjuster connected with the display unit (102) tilt the display unit (102) according to user's face coordinates; the verification module verifies the user's electronic card; the code generation module (107) generates a dynamic code, the mobile connection card verification module (108) verifies the mobile connection card; the interaction module (109) verifies voice based interaction; and the cash dispensing module (110) dispense a requested cash upon verification. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.



No. of Pages : 31 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/02/2025
(21) Application No.202521011602 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HERBAL SOAP AND METHOD OF PREPARATION THEREFOR

(51) International classification :C11D0009380000, A61Q0019000000, C11D0009020000, C11D0010040000, C11D0009260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
HERBAL SOAP AND METHOD OF PREPARATION THEREFOR Abstract Disclosed is a herbal soap and a method of preparation therefor. The herbal soap is prepared by using cold process, and by using cow dung, cow milk, and distilled cow urine with other ayurvedic ingredients. The herbal soap is chemical and color free and useful as a soft scrubber. The herbal soap is useful for all types of skin either dry, oily or normal skin. The herbal soap moisturizes the skin thereby eliminating the need to apply any lotion to the skin. The herbal soap is cost effective and is having shelf life of nine months to one year period from the date of manufacturing.

No. of Pages : 18 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/11/2024

(21) Application No.202421085922 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR PREPARATION OF BIO-FERTILIZER FROM HUMAN HAIR WASTE

(51) International classification	:C05G0003800000, C05F0011080000, C05G0003000000, C05F0005000000, C08G0018750000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an improved method of preparing bio-fertilizer from the human hair waste by wherein the hydrolysed liquid bio-fertilizer prepared by the said method increases the yield as well as quality of the crops with improvement in soil fertility. The said hydrolysed liquid bio-fertilizer significantly increases no. of leaves, no. of nodes, height of stem, no. of flowering buds, chlorophyll content and fresh and dry weight in both monocot and dicot plants. The fertilizer production can be performed at industrial scale and is a viable option for sustainable agriculture and waste management.

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/12/2024
(21) Application No.202421096225 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : THE FUTURE OF CONNECTIVITY: IOT INNOVATIONS AND EMERGING TECHNOLOGIES

(51) International classification	:H04L67/12, H04L9/06, G06N20/00, H04W4/70, G06Q10/06
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
THE FUTURE OF CONNECTIVITY: IOT INNOVATIONS AND EMERGING TECHNOLOGIES ABSTRACT The future of connectivity lies in the convergence of IoT innovations and emerging technologies, enabling seamless communication across devices, networks, and platforms. This invention explores advanced solutions to improve data exchange, reduce latency, and enhance scalability in IoT ecosystems. By leveraging AI, edge computing, and blockchain, it addresses existing challenges in connectivity. The invention sets the stage for intelligent, secure, and ultra-fast interconnectivity, shaping smarter environments.

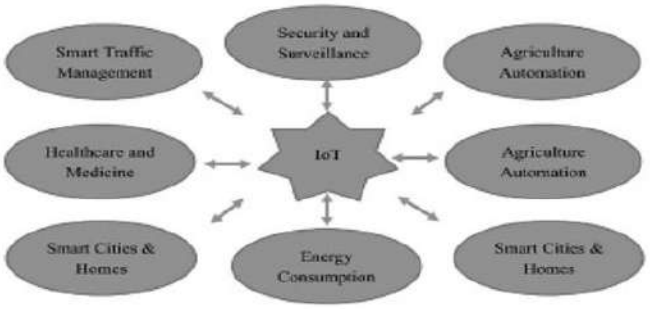

Fig.1: depicts Internet of Things is a revolutionary approach for future technology.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/02/2025
(21) Application No.202521009907 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A GRID SUPPORTIVE PHOTOVOLTAIC ARRAY-ELECTROLYSER SYSTEM

(51) International classification :H02J3/38, H02J3/32, H02J15/00, H02M7/48, H02M3/158, C25B1/04, G05F1/67
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT “A GRID SUPPORTIVE PHOTOVOLTAIC ARRAY-ELECTROLYSER SYSTEM” The present invention provides a grid supportive photovoltaic array-electrolyser system (100), comprises a solar photovoltaic module (1) is configured to capture solar energy and convert into direct current (DC) electricity and passed through a boost converter (4) for regulating the DC electricity. An energy storage unit (2) includes a bidirectional converter (5) that connects to a DC bus (6) and said bidirectional converter (5) allows the electricity to flow in bidirectional. The DC bus (6) acts a common point for integrating said solar photovoltaic module (1), a hydrogen production module (7) and said energy storage unit (2) and said DC bus (6) connects to an alternative current (AC) grid through a rectifier (3) which enables bidirectional power exchange between said solar photovoltaic module (1) and said AC grid. The hydrogen production module (7) is configured to produce hydrogen through an electrolysis process via an electrolyser (8). Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.

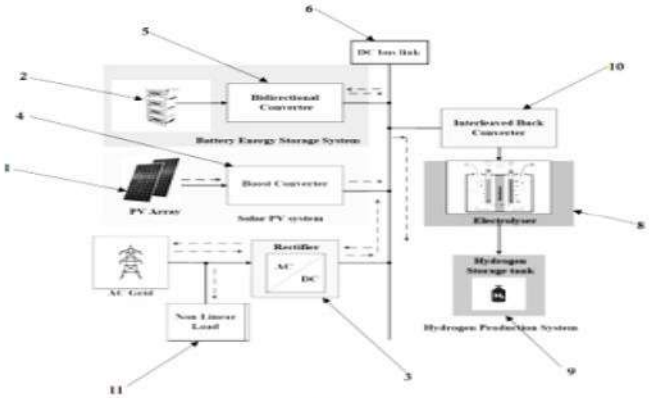

Figure 1

No. of Pages : 39 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/02/2025

(21) Application No.202521013302 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR CONVERTING A WASTE PLASTIC INTO AN ELECTRODE

(51) International classification :C23C0018160000, H01G0011860000, C10G0001100000, C10G0001000000, H01G0011360000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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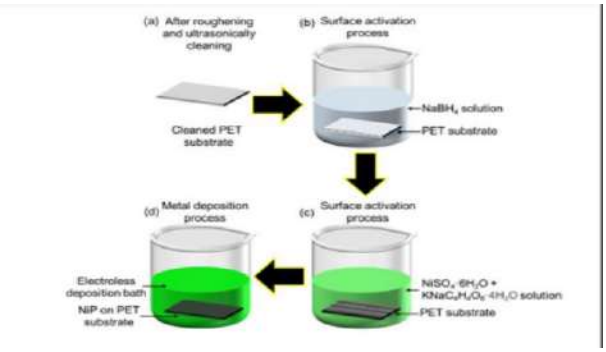
(57) Abstract :
ABSTRACT “A METHOD FOR CONVERTING A WASTE PLASTIC INTO AN ELECTRODE” The present invention provides a method for converting a waste plastic into an electrode. The present invention focusses on the preparation of the flexible electrode deposited with nickel-phosphorous (Ni-P) film on the surface of waste plastic by the method of electroless deposition and demonstrated its application in energy storage supercapacitor. The as-deposited flexible electrode exhibited a maximum capacitance of 97.04 F/g at a scan rate of 5 mV/s with an impressive capacitance retention of 86.2% after 400 cyclic voltammetry (CV) cycles and power density of 251.6 W/kg. The present invention addresses the challenge of plastic waste and fulfilling the need of flexible metal electrode. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.



No. of Pages : 26 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/10/2024

(21) Application No.202421075167 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Healingness in Modern era with special reference to Harry Potter

(51) International classification	:G06F3/01, G06T7/00, A63F13/00, A63F9/24, A61B5/16
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Healingness in Modern era with special reference to Harry Potter ABSTRACT While doing research for the Ph.D thesis work I read a whole series of Harry Potter novels and about author J.K.Rowing. After reading I found some changes in my point of view of seeing the world, mind became more open to accepting things. Then after I think about how it works on me and find out I learn so many things from each book that I read at once. The theory came out about “Healingness” (well, there is no word in English called Healingness, but doing work on my thesis I came to believe that Healingness must be a word that defines the process of healing from the wounds that a human being suffers from within his soul) and thinking process going on so deep as how it can be helpful for society, it might be a very interesting concept about storytelling people. In the modern era human beings suffer from many problems and I think this is going to be one of the solutions. I truly believe that literature has the power to cure the human mind and heart. So many problematic situations exist in the modern era and this is a way to fight along with the Healing power. Literature can be a medicine for human problems and a solution also, that is what J.K. Rowling tried to show us by her work entitled Harry Potter. The purpose of any literary work and the motivation in it makes literature helpful to human society. This human’s modern era faced one difficulty; we take as problem-related humanity people suffering from depression, and loneliness end result we found mentally weak humans. We have a treasure of literature works we might have forgotten to use now this is the time to rethink or reread stories and understand them batter way.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :29/01/2025

(21) Application No.202521007416 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : "AN IoT-ENABLED SYSTEM FOR CONDUCTING SECURED PAYMENT TRANSACTIONS AND FRAUD PREVENTION"

(51) International classification :G06Q20/32, G06Q20/40, G06F21/32, H04W12/06

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT "AN IoT-ENABLED SYSTEM FOR CONDUCTING SECURED PAYMENT TRANSACTIONS AND FRAUD PREVENTION" An IoT-enabled system (800) for conducting secured payment transactions and fraud prevention in remote areas comprising: at least one central device (100), a plurality of secondary devices (200), a portable progress tracking device (300), wherein the central device includes a server (101) for centralization data storage and processing, a master controller (102) and a wireless module (103) enables long-range communication with plurality of secondary devices (200) that includes a camera (205), a display unit (207), a keypad (208) for providing user input, a biometric scanner (203) for user authentication, a card reader (204) for reading an identification card, a speaker (206) for providing voice instructions and guidance, a thermal printer (209) for generating plurality of receipts, a wireless module (202) for communication with central device (100) and connection to portable progress tracking device (300), and portable progress tracking device (300) for processing and operational control of the IoT-enabled system (800). Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.

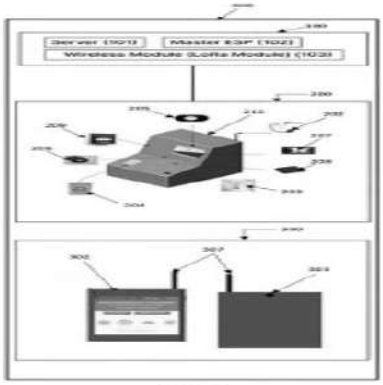

Figure 1

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2025
(21) Application No.202521013921 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : THE ARTIFICIAL INTELLIGENCE OF THINGS (AIoT) BASED AUTOMATED KEY-PRESSING DEVICE

(51) International classification :G10L0015260000, G10L0015220000, G06F0003160000, G06F0003010000, H04N0021422000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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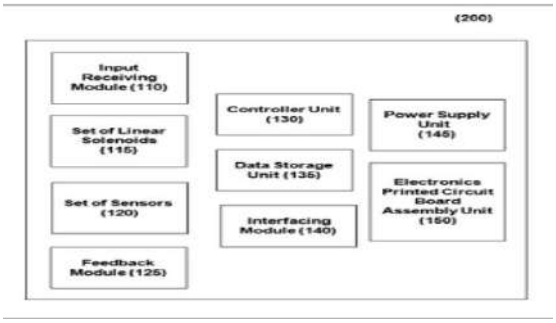
(57) Abstract :
ABSTRACT “THE ARTIFICIAL INTELLIGENCE OF THINGS (AIoT) BASED AUTOMATED KEY-PRESSING DEVICE” The present invention provides an Artificial Intelligence of Things (AIoT) based automated key-pressing/actuation device (200) that comprises an input-receiving module (110) for receiving one or more voice commands from a user, the artificial intelligence module processes voice commands and seamlessly interacts with the device (200) to automate operations on ATMs, elevators and other keypad-controlled systems by accurately pressing the required keys, a set of linear solenoids (115) acts as an actuator capable of pressing/actuation the keys when activated, thereby enabling automatic pressing of one or more specific keys based on the voice commands provided by the authorized user. The artificial intelligence module integration facilitates seamless automated operations for ATMs, elevators/lifts (300), and other keypad-controlled compatible systems, the feedback module (125) is configured to provide updates for each action performed by the device (200) and the artificial intelligence module in response to voice commands. Figure 1(a) on sheet no. 1 of the drawings may accompany the abstract when published.



No. of Pages : 49 No. of Claims : 24

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/02/2025
(21) Application No.202521012050 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PORTABLE DEVICE FOR UNDERWATER DRY LASER WELDING

(51) International classification :B64C0039020000, B23K0026210000, B23K0037000000, G03B0017080000, B23K0026700000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT “A PORTABLE DEVICE FOR UNDERWATER DRY LASER WELDING” The present invention provides a portable device for underwater dry laser welding (100), comprising an underwater drone (200) which includes an outer layer wall (101), a middle layer wall (102), and an inner layer wall (103), and creating a triple-layer chamber to maintain a desired internal pressure level inside chamber (100) and keeps said chamber (103) dry. An air compressor for supplying gas/air in (119), (120) and (121) to drive away the water and provide a dry area for welding purposes. A plurality of sensors (109), (110), (111) is configured to detect underwater conditions. A welding mechanism (106) configured for an automated and precise welding operation. An underwater camera (112) configured to provide real-time underwater images. A motorized propulsion system is connected to a control module (217) and configured to synchronize the movement of said device (100) for repair tasks. Figure 1 on sheet no. 1 of the drawings may accompany the abstract when published.

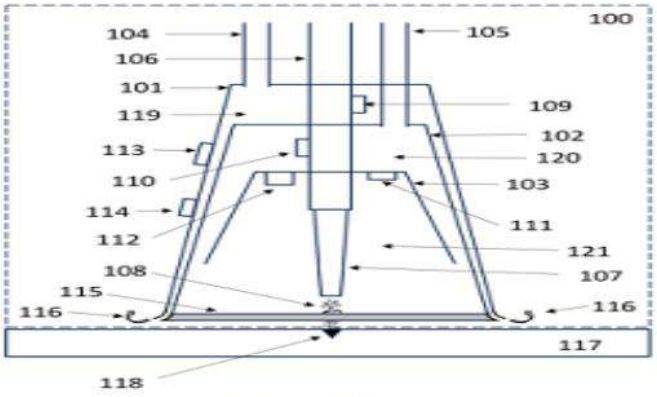

Figure 1

No. of Pages : 25 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/03/2025

(21) Application No.202521023363 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Process for synthesis of an artificial skin

(51) International classification :A61L15/28, A61L27/20, C08J5/18, A61L15/46, C08L5/04, C08L5/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Process for synthesis of an artificial skin The present invention is process for synthesis of an artificial skin. The process involves preparing cyclic polymer/gallic acid (CP/GA) and cyclic polymer/thymol (CP/T) complexes, followed by the addition of silver nitrate. These complexes are then incorporated into a film matrix (artificial skin) of sodium alginate, gelatin, chitosan, and glycerol. The resulting films show antimicrobial activity against various bacterial strains and are tested for wound healing using an in vitro scratch assay. This innovative approach provides a biocompatible and biodegradable template for addition of drug for effective solution for antimicrobial wound care. Fig 1.

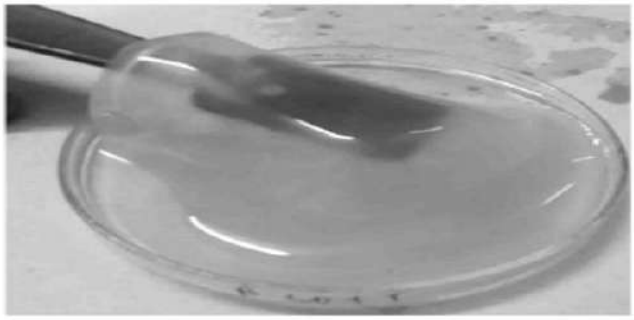

Fig. 1.

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :17/03/2025

(21) Application No.202521023515 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FitDCin

(51) International classification	:A44C0009020000, A61B0005000000, G03B0003100000, C21D0006000000, A44C0009000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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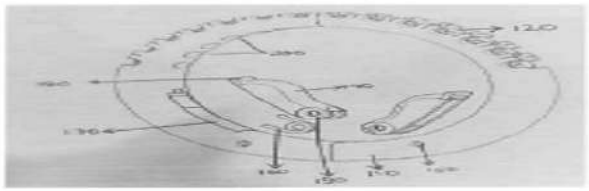
(57) Abstract :
The Present Invention relates to an Adjustable Ring with Push-Spring Mechanism designed for seamless integration into various Ring Styles, ensuring a comfortable, adaptable fit. The Mechanism features a Housing Block that securely encases a Stainless-Steel/Titanium Spring, enabling controlled expansion and contraction, situated either on the Upper side of the Shank near the Bridge or in the Lower side of the Shank. Internal Sliding Channels guide movement, while Micro Brackets and Tension Locks ensure structural stability. A Perforated Mesh is incorporated to enhance lightweight properties, breathability, and grip. The assembly is secured through Connector Blocks or directly through Tension Locks with a Pin, maintaining integrity while allowing precise adjustability. The innovative configuration ensures durability, flexibility, and user comfort, making it a superior solution for high-end jewelry.

Abstract Fig. 1



Abstract Fig. 1.1

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202521029179 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR VACUUM-ASSISTED µ-PLASMA POWDER ADDITIVE MANUFACTURING (VMPP-AM) FOR METALLIC DEPOSITIONS

(51) International classification	:B33Y0010000000, B33Y0030000000, B22F0010280000, B33Y0050020000, B29C0064153000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR VACUUM-ASSISTED µ-PLASMA POWDER ADDITIVE MANUFACTURING (VMPP-AM) FOR METALLIC DEPOSITIONS The invention provides a Vacuum-assisted µ-Plasma Powder Additive Manufacturing (VMPP-AM) process is an advanced fusion-based metallic deposition technique designed to address oxidation, contamination, and inefficiencies in the traditional additive manufacturing (AM) processes. The present invention integrates a vacuum environment with the µ-plasma powder additive technology to enhance the deposition quality and process stability. The system operates by generating a controlled µ-plasma arc in a vacuum chamber, significantly reducing oxidation and gas entrapment. The vacuum minimizes scattering, ensuring precise and concentrated energy delivery to the substrate. This results in maximizing utilization of the feedstock powder, reduced heat loss, and better microstructure control, leading to superior mechanical properties of the final product.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :19/03/2025

(21) Application No.202521024409 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COMMUNICATION PLATFORM FOR SPEECH AND HEARING-IMPAIRED HUMANS

(51) International classification	:G09B21/00, G10L15/00, G06F3/01, G06K9/00
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
COMMUNICATION PLATFORM FOR SPEECH AND HEARING-IMPAIRED HUMANS ABSTRACT Disclosed is a communication platform (100) for speech and hearing-impaired humans. The platform (100) comprises a plurality of modules such as an audio acquiring module (101), an image and video acquiring module (102), an electronic processing module (103), a user interface module (104), a speaker module (105), and a power supply module (106). The audio acquiring module (101), and the image and video acquiring module (102) receive speech input and hand gestures as the image or video inputs from a user and are communicatively coupled to the electronic processing module (103). The received signals are processed and provided as inputs to the AI and NLP models to obtain output in the form of corrected or converted speech via the speaker module (105). The platform (100) is configured for users with hearing impairment and speech disorders by accomodating both speech refinement and sign interpretation in a single platform. Ref. Fig. 1

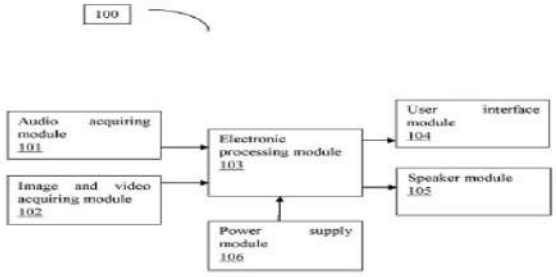

Figure 1

No. of Pages : 20 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202521027212 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS FOR GREEN HYDROGEN PRODUCTION BASED ON MAGNETIC FIELD DRIVEN OVERPOTENTIAL REDUCTION IN ELECTRODEPOSITED Ni-Co AND Ni-Fe ALLOY ELECTRODES

(51) International classification :C25B11/054, C25B1/04, C25B3/05, C25B3/07, C25B3/23, C25B11/02, C25D11/02

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A PROCESS FOR GREEN HYDROGEN PRODUCTION BASED ON MAGNETIC FIELD DRIVEN OVERPOTENTIAL REDUCTION IN ELECTRODEPOSITED Ni-Co AND Ni-Fe ALLOY ELECTRODES The present invention is in the field of electrodeposition of alloys, electrode fabrication for electrolyzers, water electrolysis and green hydrogen production. The invention aims to enhance the production efficiency of green hydrogen using electrodeposition of Ni-Co and Ni-Fe alloys and utilization of magnetic fields during water electrolysis for the hydrogen evolution reaction (HER) process. In the present invention, magnetic field/s are incorporated in different configuration/directions during the water electrolysis procedure to mitigate the overpotential of electrode materials and find out the optimum configuration of magnetic field. This method holds significant promise for reducing overpotential so that the overall efficiency of electrolyzers increases to make it invaluable for industrial-scale applications.

No. of Pages : 33 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031739 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOIL RIPPING ASSISTIVE DEVICE

(51) International classification	:G03H0001000000, G03H0001220000, G03H0001020000, B26B0021220000, F21V0007000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A soil ripping assistive device, comprising an elongated body 101 constructed with first end equipped with handle 102 to allow the user to access the device, a touch interactive display panel 104 designed to get input commands from the user for ripping the soil, rectangular frame 105 to get positioned by the user on the ground surface, multiple pneumatic pins 107 assembled on the body to get inserted into the soil, holographic projection unit 108 assembled on the platform to project the hologram for guiding the user a way to penetrate the pins 107, an inverted U-shaped member 109 arranged with second end via drawer arrangement to place a pair of suction cups 110 attached with the member over surface, an artificial intelligence based imaging unit 111 embedded with the frame determining adhering of the suction cups 110 on the surface along with penetration of the pins in the soil.

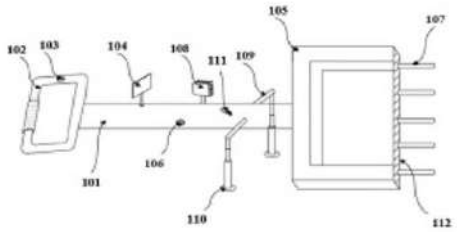

Figure 1

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2025
(21) Application No.202521006959 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “A METHOD FOR DESULFURIZATION OF A THIOAMIDE”

(51) International classification	:C07C0209100000, C10L0003100000, C10G0032000000, C07C0327480000, A61P0033100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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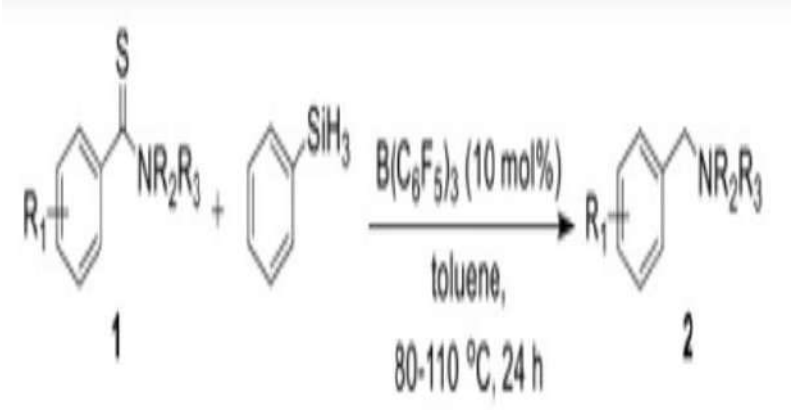
(57) Abstract :
ABSTRACT “A METHOD FOR DESULFURIZATION OF A THIOAMIDE” The present invention relates to a method for desulfurization of a thioamide. The method comprises of desulfurization of a thioamide by a boron-based metal-free catalyst in presence of phenylsilane as a hydrogen source to form an amine. The metal-free catalyst is efficient, sustainable, inexpensive and exhibits a site-specific bond cleavage of C=S bonds of thioamide without cleaving the C-N bond. The present invention provides an environment friendly, practical, and broadly applicable method as an alternative to the issue of transition metal catalyst poisoning by sulfur-containing molecules, a common and problematic occurrence in many reactions. Figure 1 on sheet no.1 of the drawings may accompany the abstract when published.



No. of Pages : 70 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :11/03/2025
(21) Application No.202521021983 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR FABRICATION AND CHARACTERIZATION OF ELECTROSPUN POLYACRYLONITRILE CARBON NANOFIBER-BASED ELECTRODES FOR SUPERCAPACITORS

(51) International classification :D01D0005000000, H01G0011860000, H01G0011360000, H01G0011460000, H01G0011240000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a system (100) and method (300) for the fabrication and characterization of electrospun polyacrylonitrile (PAN) carbon nanofiber-based electrodes for supercapacitor applications. The method (300) includes synthesizing PAN nanofibers (310) using an electrospinning apparatus (110), stabilizing the fibers through heat treatment (320), and subjecting them to carbonization (330) to enhance electrical conductivity. Structural, morphological, and elemental analyses (340) are conducted to evaluate material properties before and after heat treatments. The fabricated carbon nanofibers are processed into electrodes (350), and their specific capacitance, energy density, and power density are determined via electrochemical testing (360). The invention offers high-performance electrodes with improved electrical properties and enhanced surface area, making it ideal for supercapacitor applications in portable electronics and energy storage systems.

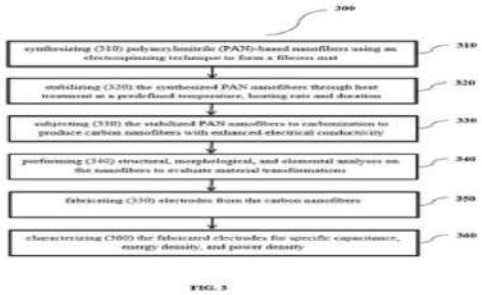

FIG. 3

No. of Pages : 32 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031786 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GROCERY STORE MANAGEMENT ASSISTIVE DEVICE

(51) International classification :G06V0030100000, H04N0007180000, H04W0004020000, H04L0009400000, G06K0007140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A grocery store management assistive device, comprising of a housing 101 with a plurality of motorized omnidirectional wheels 102 for maneuvering housing 101, a touch interactive display panel 103 for enabling a user to provide input specifications regarding a desired operation to be performed in a grocery store, artificial intelligence-based imaging unit 104 to identify position of multiple products, a robotic arm 105 for grabbing each of product gradually to position in front of housing 101, OCR (Optical Character Recognition) sensor to analyze expiry dates inscribed on products, a pair of motorized clippers 106 to grab expired product for discarding products from shelves, a conical tray 109 for accessing stored grains in an open packaging, infrared sensor for detecting any insects in stored grains, a speaker 110 to provide audible alerts regarding insects, a laser sensor for detecting size of grains.

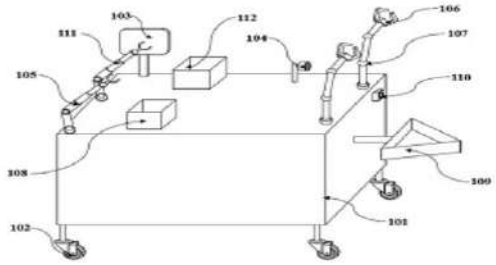

Figure 1

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031787 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : STABILITY CONTROL SYSTEM FOR TIGHTROPE

(51) International classification :G06V0040160000, G10L0015220000, G06F0003010000, G01C0021160000, G06F0003160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A stability control system for tightrope, comprises of a rectangular plate 101 having a pair of elongated handles 102 to hold the plate 101, a microphone 103 to provide voice command, an imaging unit 203 capture and process images of the person, a motorized drawer arrangement 104 to extend/retract the plate 101 for allowing the person to have better control and stability, an inertial measurement unit(IMU) to monitor stability of the person while walking, a motorized slider 105 to provide movement to plurality of weighted blocks 106 for better control and smoother walking, a harness 301 worn by the person, inflatable members 302 to inflate the members for puffing the harness 301 and reducing impact on the person, a motorized winch 204 to tighten the rope.

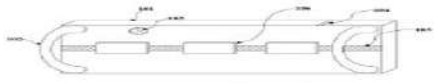
Figure 1


Figure 2


Figure 3

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031740 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : POULTRY HOUSING DEVICE

(51) International classification :A22C0021000000, B65G0001040000, B02C0004320000, B62B0005060000, A01K0031220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A poultry housing device, a base 101 having a pair of wheels 102 for a relocation of poultry, multiple open housings 103 arranged with hydraulic actuators 104 for lifting and lowering of housings 103, a first roller 105 having a spool of a polymeric fabric, mounted with a pair of rods 106 installed with first sliding units 107, for laying fabric over base 101, fabric is supported at a height over base 101 by means of a plurality of pneumatic pushers 108, a second roller 109 mounted with a pair of telescopic links 110 installed with second sliding units 111, for laying fabric over base 101, net is supported at a height over base 101 by means of pneumatic pushers 108, an imaging unit 112, to determine height of fowl, a clamp 113 is provided at an upper end of each of pushers 108 for gripping fabric and net.

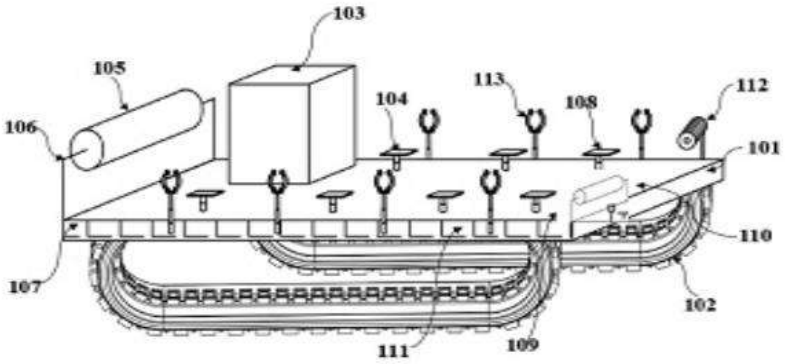

Figure 1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031741 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TRIMMED GRASS COLLECTING ASSISTIVE DEVICE

(51) International classification :A01D0043063000, G03H0001000000, A61B0008080000, A61B0001000000, G03H0001220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A trimmed grass collecting assistive device, comprising an elongated body 101 having a proximal end attached a handle 102 that is gripped by a user for positioning a second end of body 101 over a surface from which trimmed grass are to be collected, an imaging unit 103 installed on body 101 to detect height of the user, a motorized drawer arrangement extend/retract body 101 in order to position handle 102 at an optimum height in view of providing convenience to user in collecting grass without bending, a round-sectioned bar 104 attached with distal end and configured with plurality of tines 105, a holographic projection unit 106 project a hologram, depicting a way to drag bar 104/ tines 105 over surface layered with trimmed grass, a speaker 107 generate audible instructions to notify user to drag bar 104/ tines 105 over surface layered with trimmed grass.

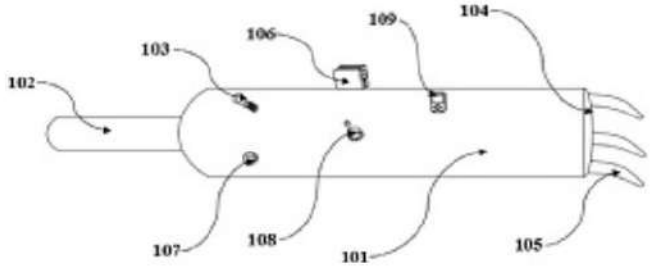

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031742 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED SAPLING PLANTATION DEVICE

(51) International classification :G05D0001000000, A61B0005110000, A01G0017000000, B25J0005000000, B62B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated sapling plantation device comprising a body 101 having multiple motorized wheels 102 arranged underneath body 101 to move over surface, an imaging unit 103 integrated in body 101 to generate a 3-D mapping of surroundings, a display panel 104 installed on body 101 to select an area where saplings are to be planted, a circular frame 105 arranged with body 101 by a pair of telescopically-operated rods 106 for positioning frame 105 over selected area, plurality of flaps 107 arranged on inner periphery of frame 105 by a motorized hinge joint 108 to provide movement to flaps 107, a hydraulic unit 109 integrated between rods 106 and frame 105 for penetrating flaps 107 into selected area, a chamber 110 installed on body 101 for storing multiple types of saplings, a robotic arm 111 installed on body 101 for acquiring a grip of a user-desired sapling from chamber 110.

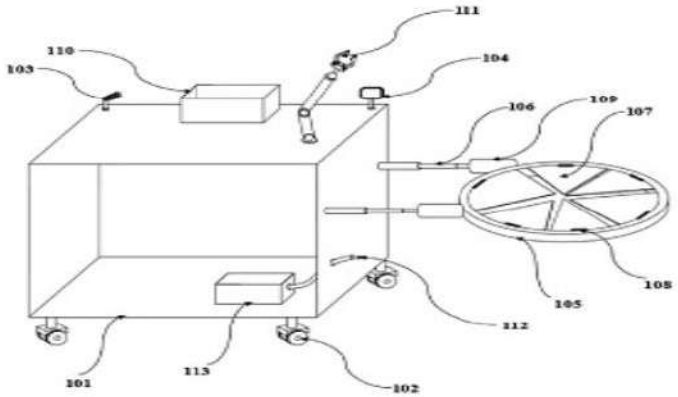

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031743 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED INGREDIENTS MIXING DEVICE

(51) International classification :F28D0021000000, B61B0001020000, G01N0011160000, C12N0015900000, E04F0011180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated ingredients mixing device, comprising a L-shaped plate 101 positioned on a fixed horizontal surface via multiple suction cups 102 arranged underneath horizontal base of plate 101, a hollow cylindrical body 103 arranged on base is accessed by user for accommodating different items to be mixed, an imaging unit 104 installed on platform determine accommodation of different items, a pair of inverted L-shaped telescopic bar 105 assembled on apex of plate 101 place an inverted U-shaped link 106 inside member for immersing a rectangular frame 107 inside the food item, a viscosity sensor configured on the frame 107 detect food items viscosity, a DC motor coupled with link 106 rotate frame 107 for mixing accommodated items, a motorized stirrer 108 configured on frame 107 blend items, a temperature sensor detect surroundings temperature, a Peltier unit configured inside member maintains optimal temperature inside member.

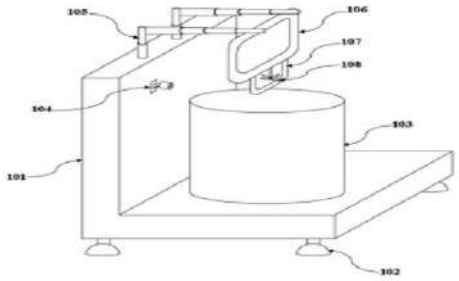

Figure 1

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031744 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SITTING ASSISTIVE DEVICE FOR TODDLERS

(51) International classification	:G06F0003160000, G06F0003044000, G06F0003041000, H01L0021680000, H04R0001040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A sitting assistive device for toddlers, comprising a L-shaped platform 101 having first and second portion positioned on ground surface, extendable legs 102 are arranged underneath first portion for supporting platform 101, microphone 103 integrated in platform 101 for enabling user to provide input voice commands, flexible harness 104 connected on first portion and configured with pair of openings to engage toddler's legs 102, artificial intelligence-based imaging unit 105 integrated in platform 101 for capturing and processing multiple images, drawer arrangement integrated in body to increase/decrease dimensions of platform 101, electromagnetic springs integrated in between links and first portion to expand/contract for providing swinging motion to toddler.

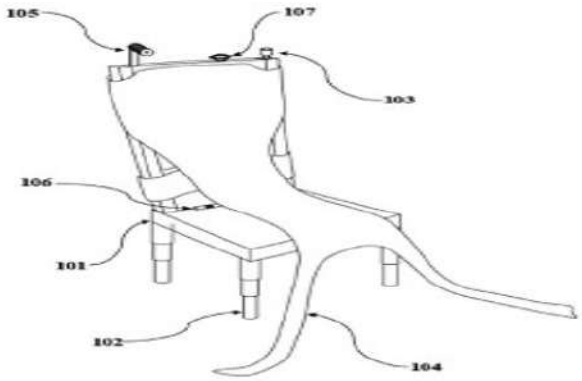

Figure 1

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031745 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED SCREEDING DEVICE FOR UNCURED FLOORINGS

(51) International classification :G06F0003041000, G16H0050700000, B62B0005000000, A61H0007000000, E04F0015024000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated screeding device for uncured floorings, comprising a cuboidal body 101 developed to be positioned on a ground surface, motorized wheels 102 are arranged underneath the body 101 over the surface, an to generate a 3-dimensional mapping of surroundings of the body 101 that are displayed on a touch interactive display panel 104 for enabling a user to select an area whose surface is to be levelled, extendable L-shaped rods 106 for positioning the bar 105 in proximity to the selected area, a motorized hinge joint 108 for providing converging/diverging movement to C-shaped plates 107 for spreading excess concrete into the gaps ensuring proper smoothening and levelling of the surface and an electromagnetic springs 110 to expand/contract for applying an appropriate pressure for levelling the surface to attain the slanted structure over the surface.

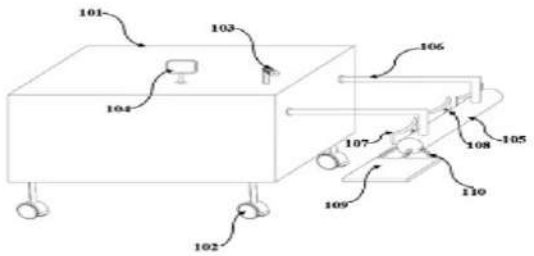

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031746 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED LEATHER SURFACE MAINTENANCE DEVICE

(51) International classification :B25J0009160000, B25J0005000000, G05D0001000000, A61F0002300000, A45C0013260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated leather surface maintenance device comprising of body 101 developed to be positioned on ground surface, motorized wheels 102 provided underneath body 101 to maneuver body 101, artificial intelligence-based imaging unit 103 mounted on body 101 for capturing and processing multiple images, robotic arm 105 installed on body 101 for acquiring grip of electronically controlled nozzles 106 configured with second section, flap 107 installed on body 101 by means of extendable rod 108 to extend/retract for positioning flap 107, motorized ball and socket joint 109 integrated between rod 108 and flap 107 provide spreading movement, robotic clipper 110 installed on body 101 grip leather sheet, ultrasonic sensor embedded in clipper 110 determines dimensions of sheet, robotic link 111 installed on body 101 positon patch, motorized cutter 112 arranged on link 111 for cutting sheet, color sensor embedded in body 101 for determining color of leather surface.

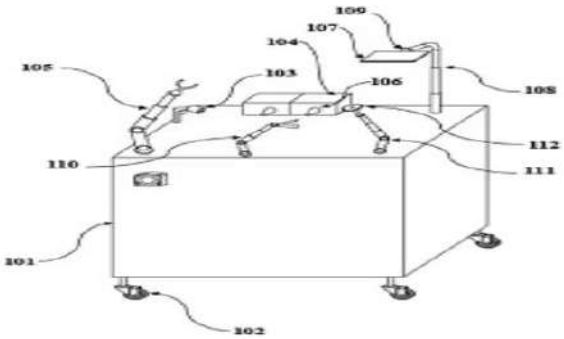

Figure 1

No. of Pages : 22 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031747 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WIRE TRANSFER ASSISTIVE DEVICE

(51) International classification :B25J0009160000, B25J0015060000, B25J0015000000, A61H0001020000, B21F0023000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A wire transfer assistive device, comprises of a platform 101 configured with multiple suction cups 102 adapted to be secured over a surface, a first pair of U-shaped frame 103 and a second pair of U-shaped frame 104 to position a first drum wrapped with a wire and a second drum over first and second frame 103, 104, a touch interactive display panel 105 to provide input regarding a length at which wire is to be unwind and wind wire, a microcontroller processes input commands and actuates a robotic gripper 106 to work in sync with an artificial intelligence-based imaging unit 107 to grip end of wire and secure wire over second drum, a pair of first motorized calendar rollers 108 and a pair of second motorized calendar rollers 109 to provide rotational movement, an inverted L-shape telescopic rod 110 configured with a motorizing cutter 111 to cut wire precisely.

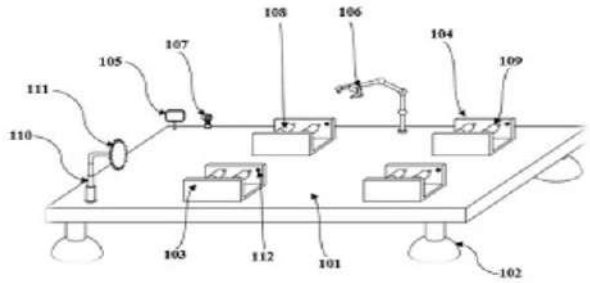

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031813 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED FARM PRODUCE SORTING DEVICE

(51) International classification	:E05B0047000000, B25J0009160000, B25J0015020000, A61L0002240000, B25J0005020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An automated farm produce sorting device, comprising of a cuboidal body 101 configured with plurality of suction cups 102, to adhere the body 101 with the surface, a touch interactive display panel 103 to provide command, a rotatable hollow cylindrical member 104, installed above the chamber, by means of a first and second inverted L-shaped link 105 which are attached with a bucket 106 by means of a robotic arm 107, to fill the far produce in the bucket 106, a set of motorized iris lids 108 to open/close, a rotary actuator 109 to rotate the member 104, an artificial intelligence based imaging unit 110 to detect unripen farm , a robotic gripper 111 to grab the unripen produce and dump into a waste container 112, and a battery is associated with the device for supplying power to electrical and electronically operated components associated with the device.

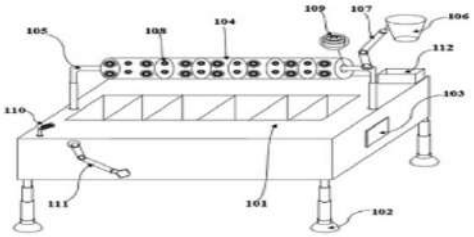

Figure 1

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031814 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTABLE FOOT RESTING DEVICE

(51) International classification :A61B0005000000, A61B0034000000, A43B0003340000, F21V0029510000, F16M0011040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An adaptable foot resting device comprising of a prism-shaped body 101 constructed with multiple curved-shaped extendable plates 102, a pair of telescopic links 103, each integrated with a motorized clamp 104 are attached with the body 101 for securing the body 101 over the bed, an imaging unit 105 configured on the body 101 for capturing and processing the multiple images of the user's leg portion, multiple motorized hinges 106 configured between the plates 102 for tilting the plates 102 towards/away from the each other, an air compressor mounted on the body 101 to inflate the inflatable member 110, a Peltier unit 107 coupled with a temperature sensor to maintain an optimum temperature inside the member, providing a comfortable resting experience, multiple vibrating unit 108 spatially provided on the body 101, to impart vibrational sensations over the user's legs, providing massaging and relaxing the sensations for enhanced rest and comfort.

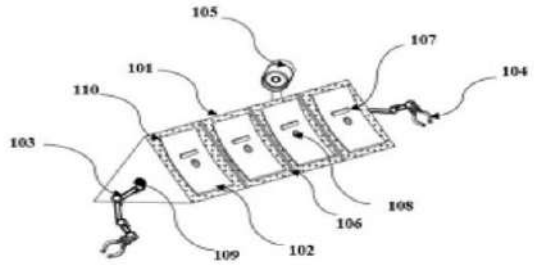

Figure 1

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031815 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WHEELCHAIR MOUNTED NECK SUPPORTING DEVICE

(51) International classification	:A61G0005100000, F16C0011060000, G10L0021021600, E05B0047000000, A61G0005040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A wheelchair mounted neck supporting device, comprises of a U-shaped body 101 to attached securely to an upper portion of a wheelchair's backrest, a multiple extendable sections 102 for adjusting size of the body 101, a pair of motorized clippers 103 for grabbing edges of the upper portion, a multiple suction cups 104 to provide additional grip over the backrest, a microphone 105 to provide input voice commands, an imaging unit 106 for capturing multiple images, a plurality of curved flaps 107 via an extendable bar 108 that extends/retracts for deploying the flaps 107 over neck portion, a multiple plates 109 integrated with motorized hinges 110 for adjusting orientation of the flaps 107, a multiple inflatable members 111 for providing a cushioning effect, a motorized ball and socket joint 112 for adjusting direction of the flaps 107, a speaker 113 to provide audio alerts.

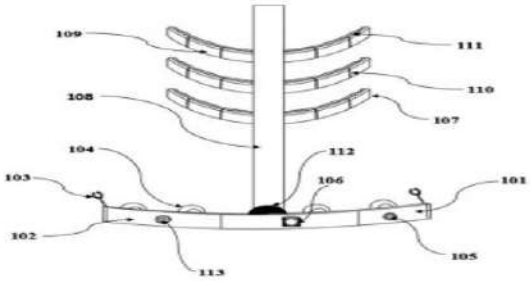

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031816 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FINGER REHABILITATING ASSISTIVE DEVICE

(51) International classification	:A61B0005010000, A61H0001020000, A61M0016000000, A61N0002060000, B60S0005040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A finger rehabilitating assistive device comprising, a curved-shaped body 101 with multiple curved-shaped extendable plates 102 fitted beneath a user's finger, integrated with a microphone 111 for voice commands, an artificial intelligence based imaging unit 103 captures finger dimensions, processed by microcontroller to actuate plates 102 and multiple motorized hinges 104 for securing device with finger, an inflating member 108 coupled with an air compressor 109, microcontroller actuates air compressor 109 to inflate inflating member 108, a pressure sensor ensuring secure comfortable grip, an inverted U-shaped frame 105 with a pair of motorized sliding unit 106 positions thermal camera 110 to detect finger stiffness or inflammation, a motorized linear actuator 107 attached with ceiling portion and integrated with a padded structure with pneumatic pins 112 provides repetitive thumping for improved blood circulation, temperature sensor detect temperature of user’s fingers, aided by Peltier unit for heating therapy.

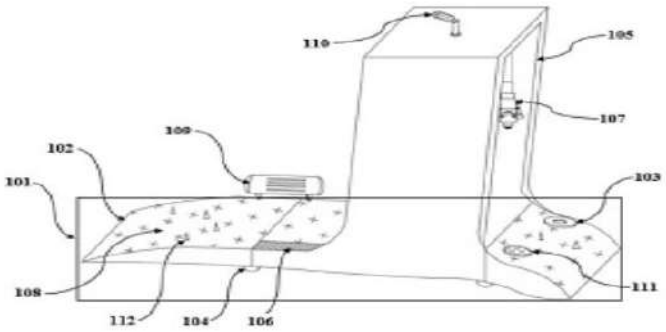

Figure 1

No. of Pages : 18 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031748 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CANDLE HOLDING ASSISTIVE DEVICE

(51) International classification :G06F0003041000, G06F0003044000, H04L0009400000, F21V0035000000, E04B0001920000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A candle holding assistive device, comprising a circular base 101 developed to be fixed on a fixed surface and configured with plurality of suction cups 102 for mounting base 101 on surface, wherein base 101 is developed to hold a candle, a communication module to provide command for securing candle, a touch sensor integrated in base 101 to detect placement of candle on base 101, an ultrasonic sensor integrated in base 101 to determine diameter of candle, an expandable pulley arrangement integrated in base 101 to expand/contract in accordance to determined diameter to hold candle properly, an extendable cylindrical arrangement 103 consisting initially multiple concentric rings 104 hinged at multiple locations, arranged on base 101 multiple motorized hinge integrated between rings 104 to provide requirement movement to rings 104 to form a spiral structure.

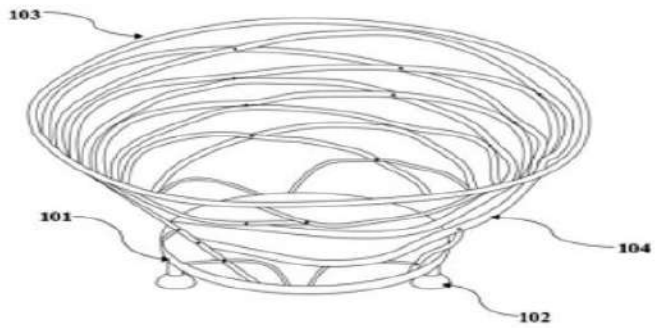

Figure 1

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031749 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GOODS MANAGEMENT DEVICE FOR VEHICLE

(51) International classification :B60J0005040000, B25J0009000000, B65G0023080000, B66F0009075000, A61B0001010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A goods management device for vehicle comprises of a U-shape body 101 with plurality of electromagnets 102 to generate magnetic field to secure body 101 to allow a user to accommodate goods over body 101 for transportation, a microphone 103 for user input regarding completion of accommodation, a motorized hinge 104 to provide movement to flap 105 in a manner to close body 101, multiple telescopic rods 106 configured with a rectangular frame 107 to extend and position frame 107 up to a length of upper section of cargo portion, an imaging unit 108 to determine distance of upper section relative to frame 107, a pair of links 109 configured with a motorized roller 110 wrapped with a covering sheet to rotate and deploy covering sheets by a robotic arm 111 installed with one of the over frame 107 and body 101 for enclosing goods within body 101.

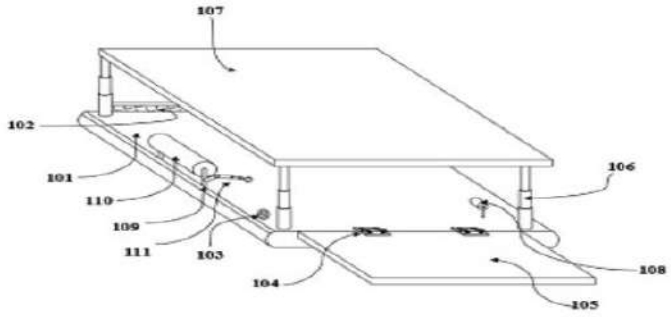

Figure 1

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031750 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED WOODEN BOWL SMOOTHENING DEVICE

(51) International classification :B61B0001020000, G06F0003041000, G06F0003044000, E01F0001000000, G01N0015143300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated wooden bowl smoothening device comprising of platform 101 developed to be positioned on fixed surface, suction cups 102 are arranged underneath platform 101 to adhere to body, circular slot 103 arranged on platform 101 for enabling user to accommodate wooden bowl, plurality of suction units 104 are integrated on slot for adhering to bowl's bottom surface, microphone integrated in platform 101 for enabling user to provide input voice commands, artificial intelligence-based imaging unit 105 installed on platform 101 for capturing and processing multiple images in vicinity of platform 101, plate 106 configured with buffing pad 107 installed on platform 101 by means of telescopically operated rod 108 to extend/retract for positioning buffing pad 107, wobble plate 106 crank arrangement 109 integrated between rod 108 and plate 106 to move plate 106 in predefined zigzag pattern.

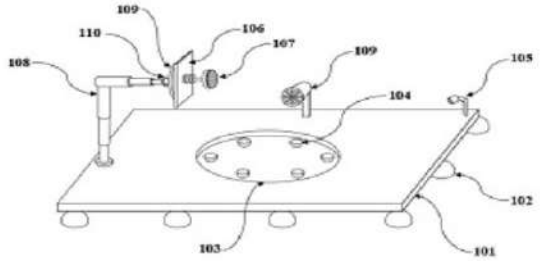

Figure 1

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031751 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DROPPED BALL RETRIEVAL ASSISTIVE DEVICE

(51) International classification :A63B0047020000, A46B0013020000, A01K0015020000, A63B0043060000, B26B0021400000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A dropped ball retrieval assistive device, comprising an elongated extendable body 101 having a handle 102 that is to be gripped by a user for manipulating the body 101 to position in proximity to a ditch, microphone 103 for enabling the user to provide input voice commands for retrieving a dropped ball from the ditch, an artificial intelligence-based imaging unit 104 to determine distance of the ditch's surface from the body 101,thermal imaging module 105 for determining exact position of the dropped ball, along with dimensions of the ball, a laser projection unit 106 to emit a laser beam onto the ditch for projecting the ball's exact position, a hemispherical member 107 with a plurality of expandable plates 108 and having multiple motorized hinges 109, for adjusting size and arc of the member 107,vibrating unit for generating vibrational sensations to dislodge stubborn residues from the scrubber during the cleaning.

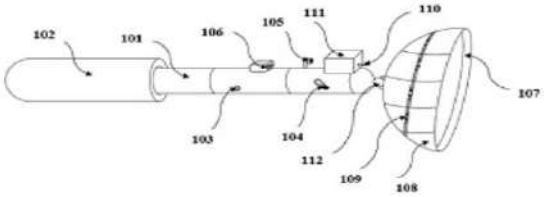

Figure 1

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/02/2025

(21) Application No.202521014018 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTIPLE-EFFECT EVAPORATION SYSTEM

(51) International classification :C01D1/42, B01D1/26, B01D45/12, B04C5/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A multiple effect evaporation system includes in sequence, a plurality of effects. Each effect includes a heat exchanger and a gas-liquid separator. The heat exchanger includes a shell body defining working fluid inlet and outlet, worked fluid inlet and outlet, and a volume; and silicon carbide mono blocks arranged within the volume. Each silicon carbide mono block defines first channels to communicate a working fluid between the working fluid inlet and outlet, and second channels to communicate a worked fluid between the worked fluid inlet and outlet in a manner to facilitate heat transfer from the working fluid to the worked fluid. The gas-liquid separator receives the worked fluid from the worked fluid outlet, separate the worked fluid into a gas-phase substance and a liquid-phase substance, and direct the gas-phase substance and the liquid-phase substance as a working fluid and a worked fluid, respectively, to subsequent effects of the plurality of effects.

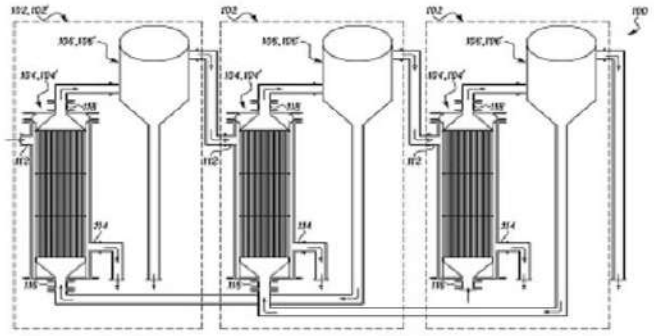

FIG. 1

No. of Pages : 25 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/03/2025
(21) Application No.202521022216 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR VISCOSITY DETERMINATION VIA THIN-FILM IMAGE PROCESSING

(51) International classification :G01N11/00, G01N21/84
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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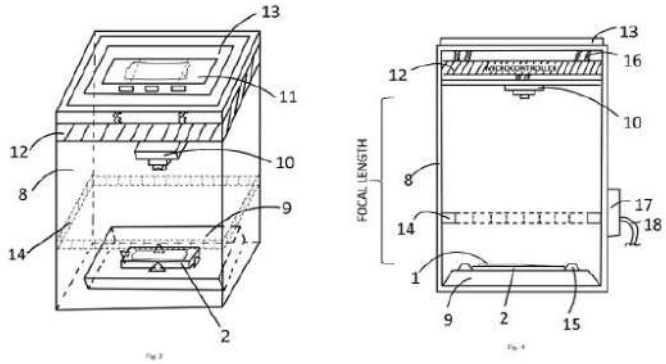
(57) Abstract :
The present invention provides an automated viscosity measurement device that utilizes image analysis to determine the viscosity of liquids, particularly those available in ultra-low volumes. The device comprises an imaging system (10) that captures real-time images of a liquid smear (1) on a substrate (2), and a computational module (12) that processes these images to determine smear length (7) and intensity gradient. A processing unit calculates viscosity based on models correlating these parameters to the capillary number. The user interface (13) displays real-time viscosity results, while automated calibration ensures accuracy. The device is portable, cost-effective, and suitable for point-of-care diagnostics, offering high accuracy and minimal sample volume requirements. It includes data storage and IoT connectivity for remote access. The invention addresses limitations of traditional methods by eliminating manual errors and providing a reliable, efficient solution for viscosity measurement in various applications. FIGURES 2 & 4



No. of Pages : 43 No. of Claims : 30

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202521032295 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A DOUBLE-LAYERED BAMBOO ASH SALT AND METHOD OF PREPARATION THEREOF

(51) International classification	:A61K0031506000, A61K0036899000, B27J0001000000, C09C0001420000, G03G0009120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)DR. VIVEK PRALHADRAO BHANGE
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(57) Abstract :
The present invention describes a novel method for producing health-enhancing bamboo salt through a high-temperature multi-stage calcination process, incorporating a double-layered bamboo ash technique for enhanced mineral enrichment. The method involves packing sea salt into bamboo sections with a structured layering of ash-coated sea salt, a middle layer of finely sifted pure bamboo ash (1 cm thick), and another layer of ash-coated salt. These sections are sealed and subjected to controlled high-temperature exposure in a refractory furnace. The bamboo salt undergoes grinding and up to nine sequential calcination cycles, ensuring exceptional purity and mineral infusion. This process eliminates impurities while imparting unique trace minerals and bioactive properties derived from bamboo and the firing process. The final product exhibits superior detoxification properties, increased alkalinity, and enhanced bioactive potential, making it highly beneficial for various health applications.

No. of Pages : 11 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031817 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HAND-HELD HOLE DIGGING ASSISTIVE DEVICE FOR PLANT SAPLINGS

(51) International classification :G03H0001220000, A01C0005040000, G06F0001160000, G03H0001020000, A01G0017000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A hand-held hole digging assistive device for plant saplings, comprising of an elongated body 101 having a handle 102 that is accessed by a user for acquiring a grip, a hollow cylindrical member 108 that is positioned by the user, an artificial intelligence-based imaging unit 103 for capturing multiple images, a touch interactive display panel 104 for displaying the captured images, a holographic projection unit 105 to project a hologram over the surface, a hydraulic actuator 106 to extend and retract for inserting a spiral blade 107 attached with pusher inside the soil, plurality of curved-shaped members 110 109 attached with a motorized hinge 109 to provide movement, an electronically controlled spout 112 integrated in a multi-sectioned chamber 111 110 to dispense the suitable fertilizer store in the chamber 111 110, plurality of LED 113 (Light Emitting Diode) lights to glow for providing optimal illumination.

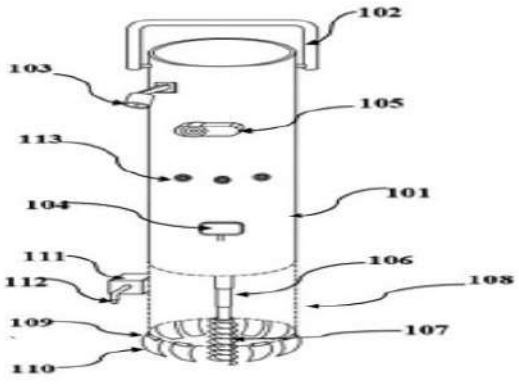

Figure 1

No. of Pages : 19 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031818 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TIRE TREAD CLEANING ASSISTIVE DEVICE

(51) International classification :H03K0017950000, B08B0003020000, G01V0003100000, G21C0017120000, G08B0021180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A tire tread cleaning assistive device comprises of an elongated body 101 having a handle 102 for acquiring a grip, a hollow curved-shaped platform 103 with an open top positioned by user in proximity to tire, artificial intelligence-based imaging unit 104 with a processor for capturing and processing multiple images, a motorized roller 105 to rotate on axis, an articulated arm 106 to extend, a L-shaped telescopic rod 107 to position member 108 in proximity to wheel, an electronic nozzle 110 with a water chamber 111 for continuously dispensing water, a speaker to produce voice alerts, inductive proximity sensor to detect presence of nails or metallic objects, a motorized ball-and- socket joint 113 to provide multi-axis rotational movement, L-shaped hydraulic pusher 114 to extend for pushing stone/pebbles and metallic object, a weight sensor to detect weight.

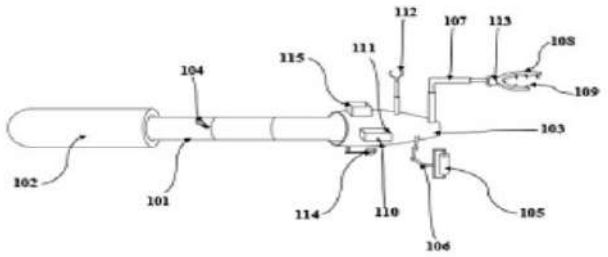

Figure 1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031819 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED PEBBLE COLLECTION DEVICE

(51) International classification :G06V0020620000, G21C0001070000, G07C0009250000, H04N0023695000, A63B0041080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An automated pebble collection device includes a platform 101 with motorized track wheels 103 for movement, a microphone 104 captures user voice commands, processed by an inbuilt microcontroller, which activates an artificial intelligence based imaging unit 105 to detect pebbles via captured images, a rectangular frame 106, operated through telescopic links 107 controlled by the microcontroller, extends to position over detected pebbles, the frame 106 has multiple rods 108 with pneumatic pins 109 arranged in a crisscross pattern for gripping pebbles, an ultrasonic sensor measures pebble dimensions, enabling the microcontroller to adjust pneumatic pins 109 extension for optimal grip, once gripped, the microcontroller actuates a motorized ball-and-socket joint 110 pair to lift and transfer the frame 106 containing pebbles to a storage chamber 102.

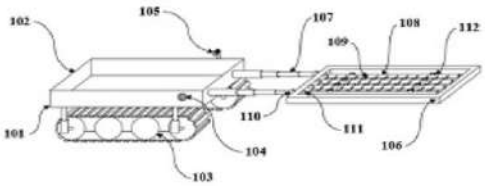

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031820 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ASSISTIVE DEVICE FOR WHEELCHAIR TRANSFERS

(51) International classification :G06F0003160000, G10L0015220000, A63B0023160000, B62B0005040000, B25J0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An assistive device for wheelchair transfers, comprises of a circular platform 101 positioned on a ground surface, plurality of telescopically operated rods 102 for supporting platform 101, a rotatable circular plate 103 for stepping over, artificial intelligence-based imaging unit 104 with a processor for capturing and processing multiple images, a pair of vertical telescopic links 105 to extend for positioning, a handle 106 for acquiring a grip, a microphone 107 for receiving voice commands for receiving voice commands, a DC (Direct Current) electric motor 108 to rotate plate 103 an optimum angle, multiple L-shaped telescopic bars 108 attached with a stabilizing pads to extend and retract for positioning pads, weight sensor to detect weight, a speaker 109 to notify user, a pressure sensor for detecting grip strength, a LDR (Light Dependent Resistor) for monitoring intensity of light in surrounding.

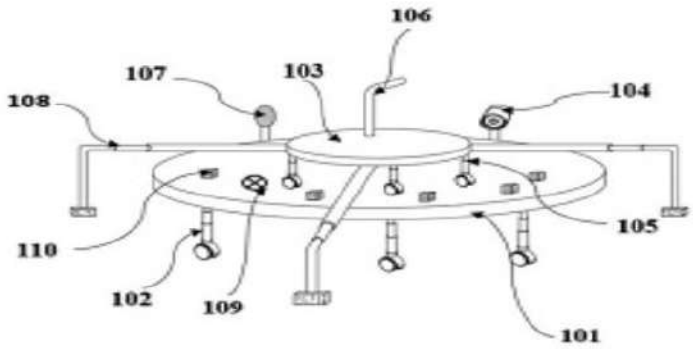

Figure 1

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031752 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED PEBBLES COLLECTION DEVICE

(51) International classification :A63B0071020000, G06F0003160000, A63B0071060000, A47G0029140000, H01M0050296000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
An automated pebbles collection device, comprising a housing 101 developed to be positioned on a ground surface by means of caterpillar wheel, a communication module enable user to provide input command regarding collection of pebbles from surface, a rotatable artificial intelligence based imaging unit 103 to generate a three dimensional mapping of surrounding to allow user to specify an area from which pebbles are to be collected, a bucket 104 by means of a pair of hydraulically operated links having a tray 105 traps pebbles, plurality of load cells detect collection of pebbles along with detecting weight of collected pebbles, a net 106 with a vibrating unit discards sand and fine pebbles, a pair of motorized pivot joint tilt bucket 104 to transfer pebbles into housing 101 via an opening 107.

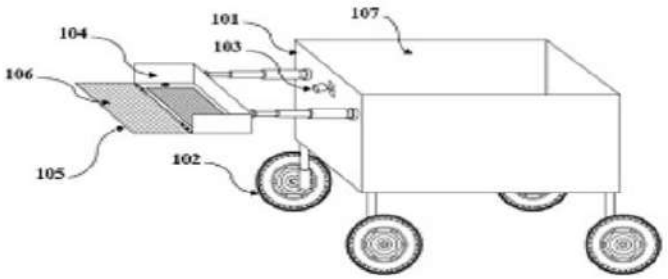

Figure 1

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031753 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EYEGLASS STORAGE DEVICE

(51) International classification :G06F0003160000, G10L0015220000, H04M0001600000, E05B0047000000, B62B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An eyeglass storage device, comprises of cuboidal body 101 having opened top utilized by user to storage of eyeglasses, push button 102 integrated on body 101 to activate device, motorized lid 103 installed on opened top exposing inner side of body 101, artificial intelligence based imaging unit 201 installed inside body 101 to capture and process images, motorized clamp 202 integrated in body 101 to grip eyeglasses, motorized slider 203 integrated between inner wall of body 101 provide downward movement, motorized ball and socket joint 204 integrated between clamp 202 and inner surface provide movement to clamp 202, microphone 205 embedded in body 101 to receive input voice command, electronically operated nozzle 206 paired with a chamber 207 housed in body 101 dispenses cleaning solution, pair of robotic link 208 integrated in body 101 and configured with fabric to clean eyeglasses.

Figure 1

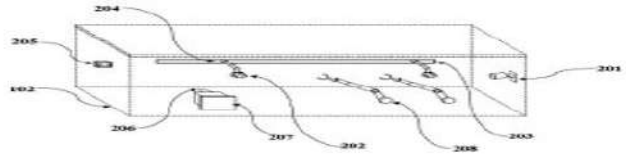

Figure 2

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031754 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TRACTION IMPROVING DEVICE FOR HEAVY-DUTY VEHICLE

(51) International classification :G06F0003038000, B60K0023080000, B60R0001080000, B60K0035850000, G06V0040190000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A traction improving device for heavy-duty vehicle, comprising a frame 101 with each side of chassis of vehicle in between front and rear wheel drive, by means of clamps, nuts and bolts, chambers 102 suspended underneath frame 101 by means of a slider 103 to store different sized gravels, communication module integrated on frame 101 to establish a wireless connection between device and a computing unit of a driver of vehicle, to allow driver to provide input command for spreading gravels in front of tires of rear, an imaging unit 104 on frame 101 to capture multiple images of surface in order to detect type of surface, microcontroller scrutinize database linked with microcontroller and evaluates type of gravel required to enhance traction, a iris lid 105 integrated in bottom of each chamber, in order to drop gravels in front of rear tire for preventing skidding of tires on the surface.

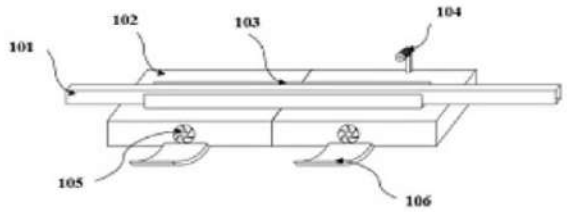

Figure 1

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031755 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HAND-HELD DECORATIVE SHEET APPLICATION ASSISTIVE DEVICE

(51) International classification :G02B0027000000, A41D0019015000, G06F0003048200, B65H0035000000, B62D0021150000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A hand-held decorative sheet application assistive device comprising a frame 101 having an elongated rod 102 positioned over a fixed surface, a handle 103 for providing grip to user, an AI-based imaging unit 104 for generating a 3D map of surface, a display panel 105 for displaying map and take user's input, a holographic projection unit 106 for projecting map over surface, a rectangular member 107 attached with free-end of rod 102 positioned near to surface, chamber 109 configured on frame 101 for dispensing adhesive glue though an electronic nozzle 108, a cylindrical roller 110 attached with lateral side of member 107 wrapped with sheet for sticking over specified portion, a pair of calendar rollers 111 attached with another lateral side of member 107 for applying pressure over sheet, a speaker arranged on frame 101 to notify user to move frame 101 in a linear motion.

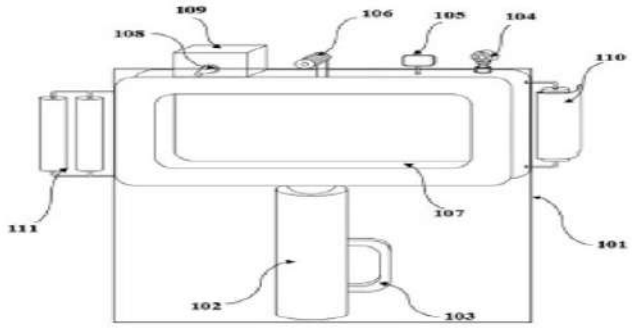

Figure 1

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031756 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTABLE HAMMER

(51) International classification :F16D0027105000, B25D0001000000, A61N0001372000, B25D0001120000, A61G0007018000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An adaptable hammer, comprising an elongated body 101 developed to be positioned in close proximity to the target surface or object by a user via a handle 102 attached with the body 101, a cylindrical block 103 for contacting with the surface or object, an artificial intelligence-based imaging unit 104 for monitoring the dimensions of the surface and object, an expandable pulley arrangement for adjusting the hammer's striking action, an electromagnetic spring 105 absorbs and dissipates the impact force generated when the block 103 strikes the surface or object, a force sensor to monitor the force applied by the user while striking on the surface or object, multiple pneumatic pushers to provide an extra boost to the block 103's impact, an angle sensor to monitor the angle of orientation of the block 103 and a tactile sensor to monitor the hardness of the surface or object being hammered.

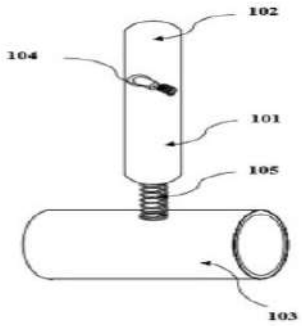

Figure 1

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031757 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AGRICULTURAL FIELD TILLING DEVICE

(51) International classification :H04L0009400000, G01N0033240000, E02D0001020000, A01B0079000000, H04W0004330000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An agricultural field tilling device, comprising of a frame 101 developed to be secured on a rear section of an agricultural vehicle, plurality of clamping units 102 is installed on the frame 101 to acquire a grip to secure the frame 101, an imaging unit 103 to detect presence of roots in soil, a hydraulic linear actuator 104 configured with a motorized conical shaped member 105 to extend and penetrate the member 105 within the soil, a plurality of pins 106 protruding outwards of the member 105, a plurality of motorized blades 107 installed over lower portion of the frame 101 by means of a motorized slider 108, a penetrometer sensor integrated within the member 105 to detect the soil compaction levels.

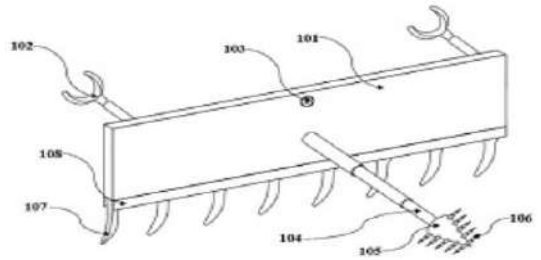

Figure 1

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031758 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FOOD RESIDUES STRAINING ASSISTIVE DEVICE

(51) International classification :B25J0009160000, A47L0015000000, A01K0063000000, A47L0015420000, A01K0063040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A food residues straining assistive device, comprising a cuboidal body 101 having an open top portion positioned on a sink corner via multiple suction cups 102 arranged on edges of body 101, an imaging unit 103 integrated in body 101 determine dimensions of vessel, a drawer arrangement integrated in body 101 adjust dimensions of body 101, a robotic link 105 installed on body 101 remove food residues from vessel into body 101 via a flap 104, multiple motorized iris lids 106 arranged on base of body 101 allow water to pass through body 101 into sink while food residues are collected on a flexible sheet 107 overlapped over lids 106 for straining residues from water, multiple chambers 108 arranged on lateral sides of base store different residues, a robotic arm 109 installed on body 101 scrape residues towards designated chamber via a plate 110.

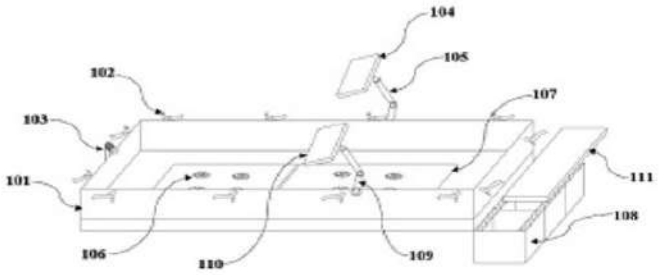

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031768 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE BACK AND HEAD PROTECTING DEVICE FOR TODDLERS

(51) International classification	:B60R0021213000, A61F0007000000, B60R0021232000, B41J0002165000, A41D0013018000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A wearable back and head protecting device for toddlers comprising a wearable body 101 to accessed by a user to accommodate over a back portion of a toddler, a plurality of straps 102 to accommodate around the toddler's torso, an imaging unit 103 having a processer to detect body 101 dimension of the toddler, a motorized roller 104 with the straps 102 to rotate in pre-defined direction for tightening/loosening, a circular head rest pad 105 to protect toddler's head, a gyroscope 106 to detect probabilities of falling of the toddler, a motorized hinge joint 107 to provide movement to the pad 105, an inflating unit 108 to absorb shocks and reducing force, a plurality of springs 111 to provide added dynamic support, a Peltier unit to generate heating/cooling effect.

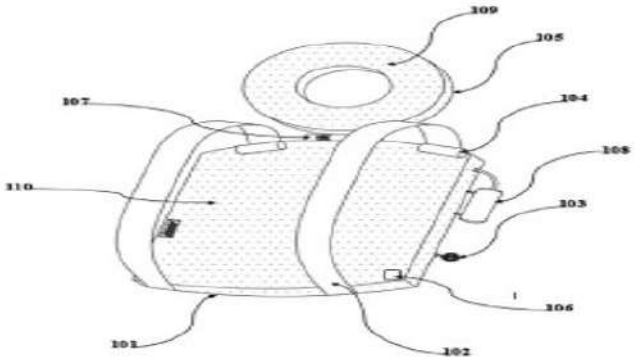

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2025
(21) Application No.202521031204 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Surfactant Free Emulsion Based Antimicrobial Spray Formulation and Method of Preparation Thereof

(51) International classification :A61P0031100000, A61K0031417800, A61P0017000000, A61K0036530000, A61K0047140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A surfactant free emulsion based antimicrobial spray formulation is described herein. The formulation comprises 0.1% - 1% of Luliconazole, 1.5 - 3.5 ml of lavender oil and 96.5 - 98.5 ml of deionized water. Luliconazole is used as an active antifungal agent. The lavender oil exhibits antifungal activity thereby enhancing activity of the formulation. The deionized water is used to facilitate the dispersion of hydrophobic materials in water thereby enhancing the stability of the formulation. The present invention provides a novel solution for effective antifungal treatment while minimizing potential adverse skin reactions, showcasing the effectiveness of combining chemical and natural antimicrobial agents in a stable emulsion system.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202521032527 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MARINE BUDDY.

(51) International classification	:C09D0005160000, G01C0021200000, G01V0001380000, G06F0012020000, H04L0051040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention discloses an autonomous dual-configuration system for removing oil and floating debris from water surfaces. Option 1 employs a manned vessel (MV) that integrates advanced conveyor belt systems for oil (OCB) and garbage (GCB) collection, a full sensor array, IoT-enabled real-time data transmission, and autonomous navigation over large areas (e.g., 1000 × 1000 m), returning to shore for unloading and maintenance. Option 2 consists of a manned docker coordinating a fleet of small unmanned modules (SUMs) equipped with identical conveyor systems, robust failsafe mechanisms ensuring continuous tracking and automatic Return-To-Base (RTB) protocols with SOS signaling upon failure. Both configurations are powered by rechargeable batteries enhanced with solar panels and incorporate advanced safety, stabilization, and communication features, along with remote diagnostics and environmental monitoring. The scalable design improves on the prototype to ensure reliable operation in dynamic aquatic environments.

No. of Pages : 25 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202521032701 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SAFE LAB ARMOUR TRAY FOR LABORATORY

(51) International classification	:B65D0090240000, A41D0019000000, B67D0007320000, B01L0009020000, A47B0037000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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4)Prof. (Dr.) Bhagwan Vitthal Jadhav

5)Mr. Atharva Ravindra Chavan

6)Ms. Sanika Ankush More

7)Ms. Nikita Narayan Sabat

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(57) Abstract :

Our invention is to a “Safe Lab Armour Tray for Laboratory ‘Laboratories must be well organized and safe to avoid chemical spills, contamination, and equipment damage. To improve use, safety, and organization, this study suggests a spill-resistant lab tray with structural sections and an adsorbent layer. By considering spills, the base’s adsorbent lining lowers exposure to dangerous substances. In contrast to traditional trays, its design keeps lab equipment safe while actively controlling liquid spillage. Different apparatus is kept in separate compartments to maintain appropriate organization and avoid breakage. In addition, the tray has ergonomic handles, raised corners and a sturdy base for safe transportation lastly, because of its customizable modular sections it can be used in industrial, research, and academic labs. This affordable solution sets a new benchmark for lab safety with performance testing for durability and spill containment, guaranteeing a more secure and productive work environment and can be a one step for smart laboratory.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025

(21) Application No.202521032871 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : STREAM HUB: LIVE STREAMING APPLICATION WITH ENHANCED BLOCKCHAIN TECHNOLOGIES.

(51) International classification	:H04L0009000000, H04N0021218700, H04L0009320000, H04N0021478800, H04W0008180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides StreamHub, an advanced Web3-enabled live streaming platform that integrates real-time broadcasting with a decentralized NFT (Non-Fungible Token) marketplace, empowering content creators to monetize their streams. The platform utilizes Real-Time Messaging Protocol (RTMP) and Web-Transport over HTTP Protocol (WHIP) for high-quality, low-latency video streaming, enabling streamers to broadcast content seamlessly. Interactive features, such as real-time messaging and emoji reactions, are powered by WebRTC-based communication, ensuring secure and low-latency chat experiences. A unique feature of StreamHub is the ability for streamers to capture specific moments during their live broadcasts and mint them as ERC-721 NFTs, ensuring each token's uniqueness and authenticity through cryptographic hashing. These NFTs are securely stored on a closed blockchain network and listed on the integrated marketplace for audiences to purchase, own, and resell. StreamHub leverages decentralized technologies, including IPFS for secure file storage, offering an innovative platform that bridges live streaming and digital asset ownership while providing new revenue opportunities for creators.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/12/2024
(21) Application No.202421095165 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SMART FOOTWEAR DEVICE FOR INDIVIDUALS WITH VISUAL OR PHYSICAL IMPAIRMENTS

(51) International classification :A61B0005000000, G06F0003010000, G01C0021200000, H04W0004900000, G08B0021020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein a smart shoe device to enhance mobility and safety for individuals with visual or physical impairments. The shoe is integrated with advanced sensors, including accelerometers, gyroscopes, infrared, and pressure sensors, to monitor user movement and detect obstacles in real-time. The device includes a NodeMCU microcontroller that processes sensor data to activate haptic or auditory feedback mechanisms, alerting users to hazards, GPS technology provides real-time navigation assistance, synchronized with a smartphone application for route planning and emergency alerts. The device has an energy-harvesting mechanism that converts mechanical energy from the user's movement into electrical energy, extending battery life and reducing reliance on external power sources. The system employs artificial intelligence to learn user habits, predict environmental conditions, and optimize sensor usage. The device is lightweight and durable, offer a discreet design and customizable feedback, providing a practical and intuitive assistive tool for navigating diverse environments safely and independently.

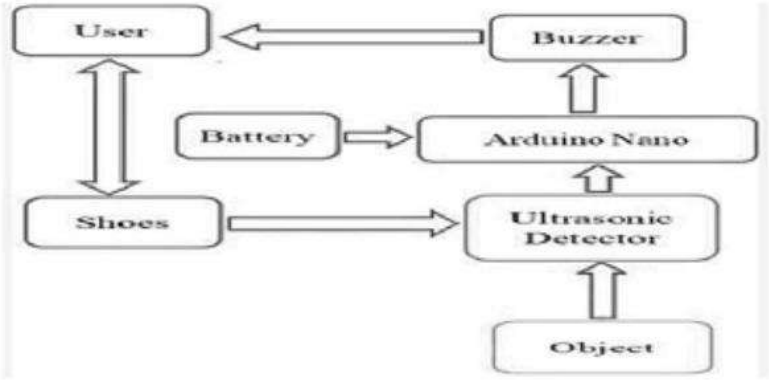

Figure 1

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :12/12/2024
(21) Application No.202421098066 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Real-Time Predictive Maintenance for IoT Devices via AI Analytics

(51) International classification :G06Q10/20, G06Q10/00, G06N3/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Real-Time Predictive Maintenance for IoT Devices via AI Analytics ABSTRACT A real-time predictive maintenance system for Internet of Things (IoT) devices is shown in this invention. This system makes use of powerful artificial intelligence (AI) analytics to improve the operational dependability, efficiency, and longevity of devices. In order to provide scalable insights, the system makes use of a comprehensive framework that combines data collecting through embedded sensors, edge computing for low-latency data processing, and cloud-based analytics. The system is able to provide maintenance recommendations that are actionable and detect probable device failures by incorporating machine learning models. These models include supervised, unsupervised, and reinforcement learning approaches along with other learning techniques. A user-friendly interface provides real-time monitoring, predictive alerts, and maintenance scheduling, while a secure connection protocol guarantees the confidentiality and integrity of the data. The invention addresses major difficulties in Internet of Things ecosystems by minimising downtime, optimising maintenance costs, and assuring flawless device performance. It is adaptable to a variety of industries, including manufacturing, healthcare, and smart cities, and it addresses these challenges. Because of its scalable and secure architecture, it is a versatile solution that can be used to manage a wide variety of Internet of Things networks in unpredictable contexts.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202521033519 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR CHANGING AN INBUILT SLEEVE FOR FLEXO-PRINTING UNIT

(51) International classification	:G03G0015000000, B28B0017000000, B30B0015020000, B41F0027100000, B21D0037040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A SYSTEM AND METHOD FOR CHANGING AN INBUILT SLEEVE FOR FLEXO-PRINTING UNIT The system and method for changing an inbuilt sleeve of air graphic cylinder of flexo printing unit for effectively performing the sleeve changeover, improving operational efficiency and reducing downtime during the printing process. The extension shaft (8) is fitted over the axial end of the cylinder shaft (3a) and the pneumatic cylinder (4) apply force vertically onto the extension shaft (8)causing to lift the air graphic cylinder (3a) to lift from its opposite end. Then, the pressurized air is filled within the air graphic cylinder (3a) through the extension shaft which causes the sleeve to expand and move away from the air graphic cylinder (3). Said sleeve is easily withdrawn from the air graphic cylinder and new sleeve can be rolled over. The invention is particularly advantageous for industries that require frequent job changes, as it significantly reduces the time and effort associated with sleeve changeovers. Fig. 4

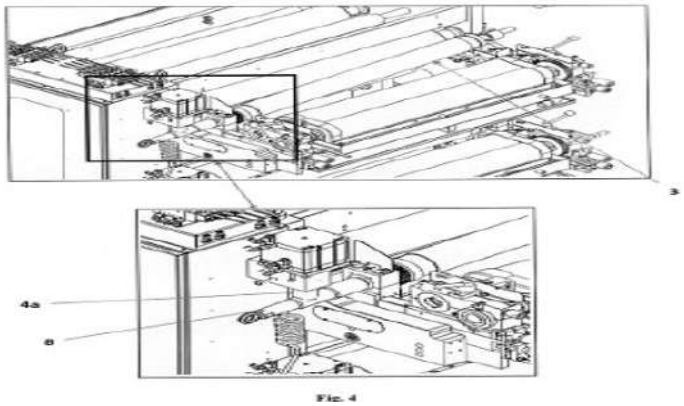

Fig. 4

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202521032303 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : TRIPLEX HEAT EXCHANGER UNDER THE CONDITION OF VIBRATION.

(51) International classification :C12Q0001683900, B63B0025160000, A61P0025000000, A61K0039000000, A61P0029000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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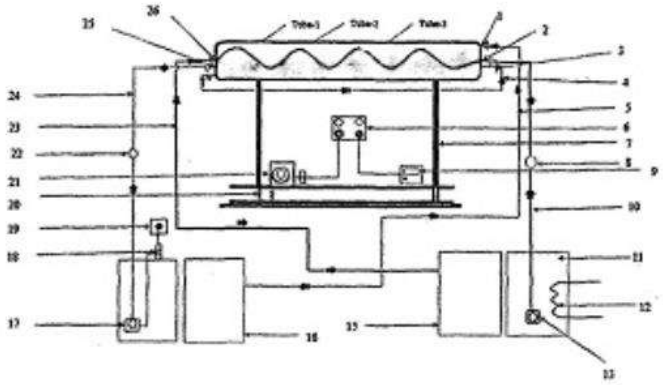
(57) Abstract :
A heat exchanger is an important component in the domain of heat transfer. A heat exchanger's efficiency is influenced by several variables, including fluid flow rate, surface area, and temperature differential, heat transmission between fluids is determined by the number of transfer units (NTU), capacity ratio, and thermal conductivity. In the present, an experimental study has been done on the Triplex heat exchanger under the condition of vibration. The analysis has been compared with steady-state and vibration applied on heat exchangers. An increase in mass flow rate under vibration conditions it will raise the Nusselt number. Also raising the acceleration from a steady state to 3G increased the heat exchanger's effectiveness. The heat exchanger's efficiency increases under the condition of acceleration. In this invention, the Triplex Heat Exchanger and its potential applications in the generation of renewable energy.



No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202521033815 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : S.M.A.R.T. M.E.D.I. BOX - Smart Medication Assistance & Reminder Technology for Monitoring, Efficient Dispensing, and Intelligent Box

(51) International classification	:A61J0007040000, G16H0020130000, G16H0040670000, A61J0007000000, G16H0010600000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The S.M.A.R.T. M.E.D.I. BOX. is an Intelligent, automated drug dispenser and monitoring box designed to help the patient comply with the drug regimen while keeping the caretaker aware about the events of medication dispensing. The system is meant to dispense the drug on time and with accuracy using an RFID/NFC authentication mechanism for verifying the patient before dispensing the prescribed quantity. A weight/IR Sensor registers the taking of Medicines, reminding when doses are missed. In this event, caregivers receive SMS notification so that they can intervene in time and reduce the Health Consequences associated with missed doses. The System Features an LCD interface for Easy Program adjustments of Medication Schedules and Re-Programming. Simple button navigation ensures patients or caregivers can easily configure the system. An SOS emergency button is also provided to call for immediate assistance during all medical emergencies for a faster response and a safer patient. For Enhanced Reliability and continuity of Operation, the System is maintained with a Dual Power Supply option, which consists of a Primary Power Adapter and a second Battery Power Source. This feature works towards keeping the system operational in the event of power outages, especially concerning elderly patients or patients who are chronically ill and Administered Medications on a timely basis. Scalable and Modular Designs allow Customization according to specific Medical requirements, hence suited to assisting Heterogeneous Populations such as the Elderly, Chronically ill patients, and individuals with strict Medication compliance requirements. The inclusion of real-time monitoring, secure authentication, automated reminders, and Emergency Support offers an effective and economically viable solution to promote Medication adherence and relieve Caregiver burden while optimizing general Health Care Management.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202521033816 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN AUTOMATED BUILDING CONSTRUCTION USING IoT-INTEGRATED SYSTEMS

(51) International classification	:G06N0020000000, H04W0004380000, G06N0003044000, G05B0019418000, G06Q0010060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The proposed invention introduces an AI-driven automated building construction system integrated with Internet of Things (IoT) technology to revolutionize conventional construction methods. The system comprises autonomous robots, drones, IoT sensors, and a centralized AI controller that collaborates to monitor, analyze, and optimize all construction activities with minimal human intervention. Real-time data from sensors and drones enable the generation of a dynamic digital twin for predictive modeling, quality assurance, and process optimization. Autonomous machines execute tasks such as bricklaying, concrete pouring, surveying, and material transport with high precision, while AI-driven algorithms enhance resource management, safety compliance, and sustainability. The system proactively identifies hazards, predicts maintenance needs, and ensures continuous workflow optimization through machine learning. By leveraging AI and IoT integration, the invention dramatically increases construction efficiency, reduces risks, lowers costs, and aligns with green building practices, representing a transformative advancement in the construction industry aimed at future-proof, intelligent infrastructure development.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031769 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTABLE ARM SUPPORTING DEVICE

(51) International classification	:A61B0018000000, H01L0021670000, G06K0007100000, G01B0011020000, G06F0003048200
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An adaptable arm supporting device comprises of a curved plate 101 to place an arm over plate 101, an imaging unit 102 for capturing images to determine dimensions of arm, multiple motorized hinge joints 103 to regulate shape of plate 101, an inflatable cushioned layer 104 connected with an air compressor 105 to inflate the layer to grip user's arm, a laser sensor to determine height of user, a hydraulic rod 106 to extend and place a supporting member 113 in contact with surface, a display panel 107 to provide input regarding a location at which user is required to reach, a GPS module to monitor real time location of device, a speaker 108 to guide user, a shock absorbing unit 109 is to absorb shock experienced by rod 106, multiple curved links 110 to grip the accommodated arm, a multi-sectioned chamber 112 stored with medication of various types.

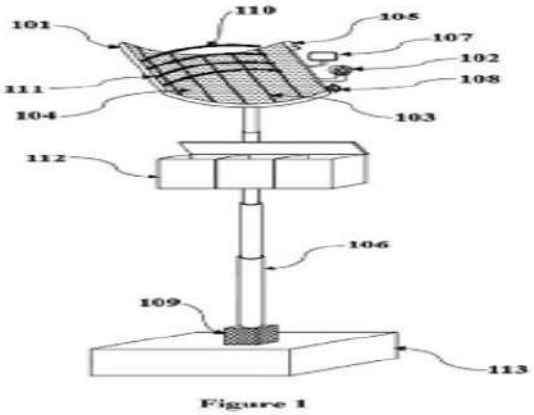

Figure 1

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031770 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RAINWATER HARVESTING DEVICE

(51) International classification	:E03B0003020000, E04D0013076000, G01B0017000000, B62K0025040000, G21C0003320000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A rainwater harvesting device, comprises of a cuboidal housing 101 with multiple motorized wheels 102 for providing movement to housing 101, a push button 103 to activate the device, a primary sensing module to sense possibilities of rain, a hollow telescopic arrangement 104 to extend an inverted canopy arrangement 105, an ultrasonic sensor to monitor the height of telescopic arrangement 104 being extended, a canopy arrangement 105 to collect rainwater by maximizing surface area, to allow passage for harvested water into housing 101 and prevent debris from entering telescopic arrangement 104, a level sensor monitors the level of water harvested, a computing unit for notifying the person to discard the harvested rainwater, an artificial intelligence-based imaging unit 107 to detect clogging of debris into the filter 106, a suction to extract the debris, and transfer into a chamber 109.

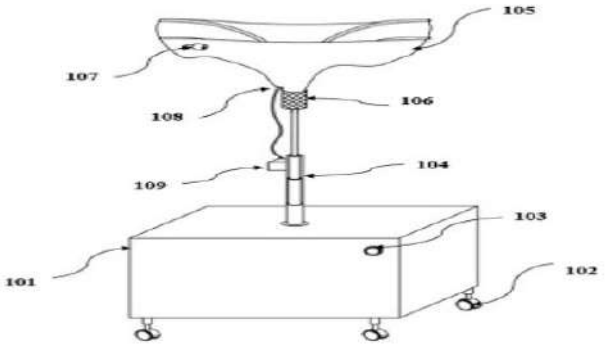

Figure 1

No. of Pages : 21 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031771 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED METAL REDUCER MANUFACTURING DEVICE

(51) International classification	:B23K0010000000, B23P0015240000, B23K0037040000, B23K0037047000, B23P0023040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An automated metal reducer manufacturing device for manufacturing a reducer from a metal pipe, the device comprising of a platform 101 with suction cups 102 for secure positioning, a touch interactive display panel 103 for user input, and an artificial intelligence-based imaging unit 104 for determining pipe dimensions, a C-shaped motorized grippers 105 securely hold the pipe while, a plasma cutting unit 106 precisely cuts evaluated portions, a L-shaped frame 110 mounted on the platform for pressing a plank 111 installed with the pusher over cut joints to bend the cut portions a gas welding unit 112 welds the joints, forming a frustum-shaped structure, while a motorized grinding unit 113 removes rough edges for a smooth finish, and a motorized ball and socket joint 115 is integrated to ensure accurate bending of the cut portions.

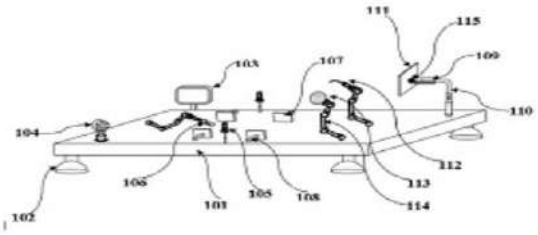

Figure 1

No. of Pages : 21 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031772 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CONVERTIBLE MOBILITY ASSISTIVE DEVICE FOR RAMP

(51) International classification :B62B0005000000, A61B0017000000, A47C0031000000, A61G0007100000, E21B0017100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A convertible mobility assistive device for ramp, comprises of a pair of vertical plates 101 with telescopic rods 102 and Omni-directional wheels 103, allowing easy manoeuvrability, a series of motorized flaps 104, adjustable via voice commands, can be configured into either a continuous ramp or stepped structure based on user preference, hydraulic actuators 107 ensure stability and proper alignment when forming a stepped ramp, while a weight sensor and artificial intelligence-based imaging unit work together to detect the load on the ramp, activating a damping mechanism 108 for smooth operation, an inverted U-shaped support member 109 provides additional assistance during use, and powered by an integrated battery.

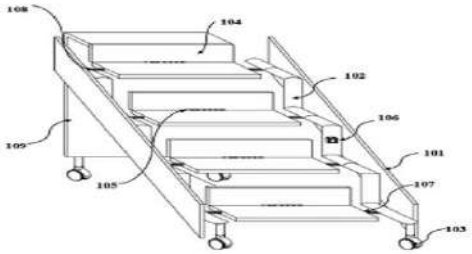

Figure 1

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202521029347 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR PROVIDING HUMAN PERCEPTIBLE EFFECT IN AN INTERACTIVE CHAIR

(51) International classification	:G06F0003010000, G02B0027010000, G06T0019000000, G06F0003034600, G06F0003030000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A system (102) to provide human perceptible effect (116) is disclosed. The system includes a wearable unit (106), a plurality of feedback units (112), and at least one processor (112). The wearable unit (106) is coupled to an interactive chair (110) and adapted to be worn by a user. The wearable unit (106) includes a head-mounted display unit having a control unit (108) configured to render Augmented Reality (AR)/Virtual Reality (VR) environment. The at least one processor (114) is configured to receive an input from the wearable unit (106), the input includes an action performed by the user in the AR/VR environment rendered by the wearable unit (106), and generate a feedback signal based on the received input for at least one feedback unit of the plurality of feedback units (112) to generate the human perceptible effect (116) in the interactive chair (110) based on the feedback signal.

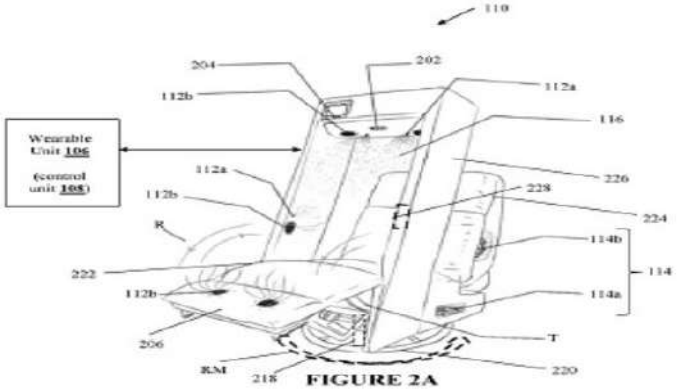

FIGURE 2A

No. of Pages : 22 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025

(21) Application No.202521033173 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : VISION AID: SMART NAVIGATION STICK.

(51) International classification	:A61H0003060000, A61B0034200000, G02C0007040000, G01C0021200000, G01C0021000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This paper explores the application of the Raspberry Pi 5 in developing a smart ultrasonic walking stick for individuals with visual impairments. According to the latest data, approximately 285 million people are visually impaired, and 30 million are permanently blind. These individuals face significant challenges in mobility and navigating their surroundings, often requiring assistance to reach their destinations. The proposed smart walking stick enhances mobility and independence by utilizing ultrasonic sensors to detect obstacles. When an object is detected, the stick provides real-time audio feedback, allowing the user to navigate safely and confidently. This innovative device is designed to alleviate daily challenges and promote worry-free travel for visually impaired individuals, offering an effective solution to their mobility issues

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202521033178 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT BASED ENHANCED SOIL AND PLANT HEALTH MONITORING SYSTEM USING ML.

(51) International classification	:A01G0007000000, G01N0033240000, A61B0005000000, G01N0021840000, H04L0001186700
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Soil health and plant health ensure productive agricultural processes and food security. The conventional methods of monitoring soil health and detecting plant diseases are lengthy, error-prone, and ineffective, especially in large-scale farming. Therefore, new advances like IoT and Machine Learning have made it possible for real-time monitoring and predictive analysis in soil and plant health. This research focuses on developing an IoT-system that collects environmental data, manipulating with Convolutional Neural Networks (CNN) for plant disease detection and classification. The system operates an outstanding 98% accuracy rate on prediction, proving reliability and effectiveness in prediction. The automated data collection and advanced Machine Learning techniques used in the system surpass the drawbacks of conventional techniques and, hence, provide faster, more accurate and scalable ways for monitoring soil and plant health

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202521033438 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR IN-SITU CHARACTERIZATION OF NANOSTRUCTURE GROWTH ON ELEMENTS

(51) International classification :G01N0021650000, G01J0003440000, H01L0021020000, C25D0021120000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system and method for in-situ characterizing the growth and formation of nanostructures on a surface of elements in real-time are disclosed. The system (1000) comprises an in-situ Raman spectroscopy cell (100) comprising an electrolyte (115) filled within a cylindrical cavity, an anode assembly (120) having an anode (125), at least one cathode assembly (130) and a reference electrode assembly immersed in the electrolyte, an optical microscope (200) coupled to a laser probe (205) positioned to focus the anode (125), and a computing device (400) connected to the probe and the microscope. A voltage is applied by a power supply unit (300) for anodization at an increased voltage rate, while a laser beam is applied by the probe (205), Raman Spectra of the anode (125) at an interval of the application voltage is obtained and analyzed for determining a plurality of growth stages of nanostructures on the anode (125). Reference Figure: Figure 7

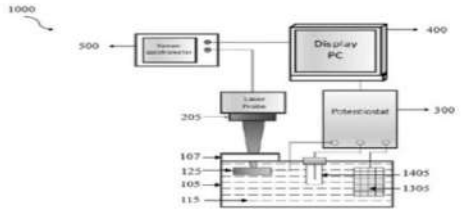

Figure 7

No. of Pages : 49 No. of Claims : 23

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521033818 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI Powered FIR Drafting Legal Assistant for Police officer through Speech and Text

(51) International classification	:G06Q0050260000, G06Q0010100000, G10L0015260000, G06Q0050180000, G10L0015220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The FIR Generator Software is an intelligent and user-friendly application developed to reduce the time and effort involved in the traditional FIR filing process. The system is designed with a dual-input mechanism: a text input interface specifically for police personnel to enter structured and formal incident details, and a speech input interface tailored for aggrieved individuals to narrate their experience in a natural, spoken format. Using speech-to-text technology, the software accurately converts voice input into written content, helping victims communicate freely without technical barriers. Once the data is provided, the software processes the input and automatically generates a properly structured FIR based on official templates. It ensures the report is clear, consistent, and legally sound. The final FIR can be reviewed, edited if necessary, and downloaded as a PDF document for official use, printing, or digital storage. An additional feature includes the automatic recommendation of relevant legal sections based on the nature of the incident, assisting police in classifying cases more efficiently and accurately. This enhances legal consistency and supports less experienced officers in the FIR drafting process . The software is designed with scalability in mind, and future versions may include multilingual support, offline access, integration with government databases, and mobile application support to further improve accessibility and usability in rural and remote areas. By automating and digitizing the FIR generation process, the software reduces manual paperwork, minimizes human error, and ensures quicker access to justice. It enhances efficiency, promotes transparency, and provides a supportive platform for both law enforcement and the public, especially in sensitive or urgent situations.

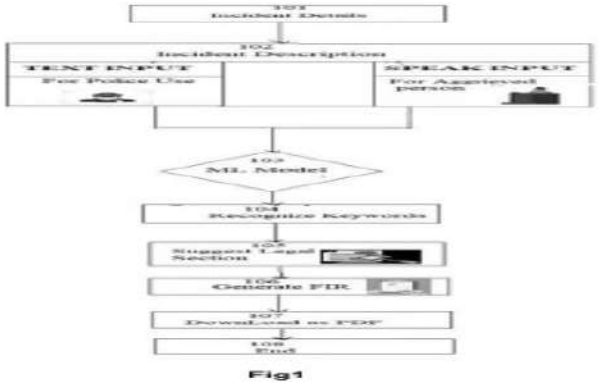

Fig1

No. of Pages : 24 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202521033886 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Powered Neurofeedback System for Leadership Education and Strategic Decision Training

(51) International classification :A61B0005000000, A61B0005375000, G06N0003045000, G06N0003080000, G09B0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an AI-powered neurofeedback system designed for leadership education and strategic decision training by integrating advanced brainwave sensing technology, artificial intelligence, and personalized cognitive development. Using non-invasive EEG sensors, the system captures real-time neural activity and processes it through a machine learning-driven analytics engine to assess cognitive functions critical to effective leadership, such as decision-making agility, emotional regulation, and strategic thinking. Tailored neurofeedback is administered dynamically through scenario-based simulations and cognitive exercises, fostering rapid growth in leadership competencies. The system offers individualized learning paths aligned with different leadership styles, while maintaining high standards of data privacy and user security. Through longitudinal tracking and adaptive training, the invention empowers individuals and organizations to scientifically nurture leadership skills based on objective, real-time cognitive measurements, thereby revolutionizing traditional leadership development methodologies with a neuroadaptive, AI-driven approach.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521033889 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Smart PinkBin Women's own Menstrual waste Bin

(51) International classification	:B65F0001000000, B65F0001140000, A61F0013472000, B65F0001060000, H04N0001000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :

Smart PinkBin Women's own Menstrual waste Bin The PINKBIN is a waste disposal system dedicated to managing menstrual waste in a hygienic and eco-friendly manner. Featuring a color-coded design, the PINKBIN promotes efficient waste segregation while reducing stigma around menstruation. Key features include biodegradable waste bags, and optional smart technologies such as sensors, app integration, and GPS functionality. Designed for both private and public settings, the PINKBIN ensures privacy, ease of use, and enhanced sanitation. Coupled with educational campaigns, the PINKBIN aims to raise awareness about menstrual hygiene and foster environmentally sustainable practices. This invention provides a scalable, user-friendly solution to address the critical gap in menstrual waste management systems.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202521033965 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Smart Attendance Monitoring System using Bluetooth Beacons

(51) International classification	:G06Q0050200000, G07C0001100000, H04L0009400000, H04L0067120000, H04W0004800000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
From a long time the trend of attendance taking is done in traditional manner by calling either the roll call or name of student which is time consuming and also error can occurs like missing some student attendance or proxy etc. The Smart Attendance Monitoring System Using Bluetooth Beacons can prove to be an efficient, less time consuming and an automated solution to this traditional attendance taking system. Bluetooth beacons are used in this new attendance system, whereby each student is given a device emitting a unique identifier value (UUID). A teacher or administrator could easily identify these devices via a basic web application and take attendance with ease. Its augmented security prevents proxy attendance; it remains accurate and fits right in with already existing platforms. The main aim of developing this system is to get rid of the overhead of taking the attendance manual. Apart of this device can also help us in not only taking attendance but also in report generation. The attendance reports deal with real-time information, providing for reduced administrative burden and its ability to operate in diverse settings thus becoming an intelligent cost-saving solution for schools.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521033987 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Ayurmarg AI-Driven Multimodal Ayurvedic Healthcare Platform with Hybrid Training, Self-Evolving Knowledge Graphs, and Practitioner-Informed Prescription Generation

(51) International classification :G06F0016360000, G06N0020000000, G16H0080000000, G16H0050200000, G16H0050700000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides an artificial intelligence (AI)-driven system and method for enhancing Ayurvedic diagnosis and treatment through four interconnected innovations:1)Hybrid AI Training Framework: Trains diagnostic models by simultaneously processing classical Ayurvedic texts (e.g., Charaka Samhita) and real world doctor-patient dialogues, using contrastive learning to align semantic concepts (e.g., dosha imbalances) across static doctrines and dynamic clinical interactions.2)Self-Evolving Knowledge Graph: Autonomously constructs and refines structured disease-symptom-herb relationships from unstructured consultations, dynamically adjusting edge weights based on usage frequency, contextual relevance, and practitioner feedback.3)Biomedical-Ayurvedic Integration Engine: Maps modern diagnostic data (e.g., HbA1c, lipid profiles) to Ayurvedic parameters (e.g., Madhumeha, Medoroga) using optical character recognition (OCR) and hybrid rule based/machine learning algorithms, generating unified diagnostic reports.4)Practitioner-in-the-Loop Validation: Actively incorporates clinician corrections and patient outcomes into AI predictions via reinforcement learning, ensuring continuous refinement of diagnostic accuracy. By bridging ancient Ayurvedic wisdom with modern clinical and biomedical data, the invention delivers context-aware, explainable diagnoses that improve trust and applicability in real-world healthcare settings.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031773 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WASTE COLLECTION DEVICE

(51) International classification :B65F0001140000, B25J0009160000, B65F0001120000, H04N0023110000, A61M0011040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A waste collection device, comprising a cylindrical shaped housing 101 positioned within a ground surface and developed to store waste positioned in proximity, an imaging unit 102 for capturing images of surroundings, a robotic gripper 103 to grip and collect the recyclable material within a chamber 104, a motorized iris lid 105 actuates to open in view of enabling the gripper 103 to collect the recyclable material, an motorized brush 106 via a robotic link 107 to scrub the detected dirt from the surroundings, a suction unit with the brush 106 and linked with the container 108, a level sensor to monitor level of the collected dirt and recyclable material, a pneumatic pusher 109 to compress the collected dirt and recyclable material, an LDR to monitor light intensity in the surroundings, an LED light panel 110 to emit light in the surroundings.

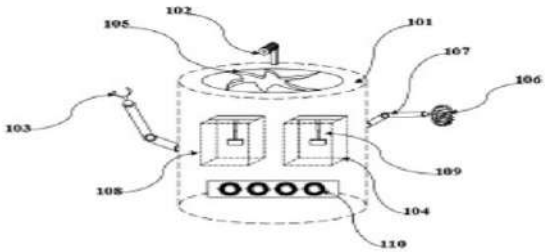

Figure 1

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031774 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BULB HOLDER REMOVING ASSISTIVE DEVICE

(51) International classification	:A61B0001000000, F25D0029000000, B29K0105000000, A61B0017000000, A61B0001005000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A bulb holder removing assistive device comprises of an elongated body 101 attached with a handle 103 to acquire firm grip for handling the device, a touch interactive display panel 104 to provide input command for removing an old bulb, an inbuilt microcontroller linked with the panel to position a distal end 107 of the body towards the holder to be removed, an imaging unit 106 to capture images of surrounding, a motorized drawer to extend the body as per the determined distance, in order to position a curved member, a laser sensor to detect dimension and curvature of the holder, a motorized ball and socket joint installed between the distal end 107 and member to provide multi-directional movement to the member, and a pressure sensor to detect pressure applied by the member.

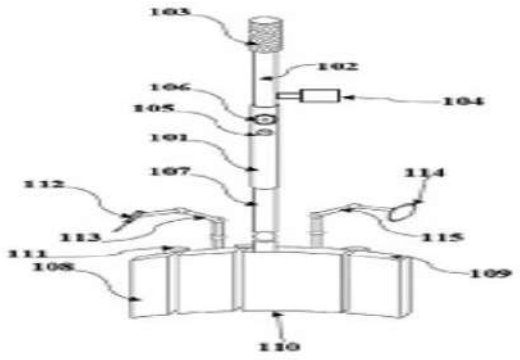

Figure 1

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031775 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BRICK CUTTING DEVICE

(51) International classification	:B28D0001220000, B28D0007040000, B28D0001240000, B65B0051140000, B28B0011140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A brick cutting device comprises of a L-shaped hollow rectangular body 101 with a handle to position the body 101 over a brick to be cut, an imaging unit 102 to detect corners of the brick, a pair of L-shaped telescopic rod 103 to position a plate 104 over the corners to securely grip the brick, a microphone 105 to provide input commands regarding cutting of the bricks of user-desired dimension, a sliding unit 106 to provide sliding movement to a cutting unit 107 via telescopic bar 108 over one of plurality of slots 109 to position the cutting unit 107 towards a length of the brick to be cut, a hydraulic shaft 110 to apply controlled force on the cutting unit 107, a motorized suction unit 111 to create vacuum pressure to collect and dispose the airborne dust and debris within a waste container 112.

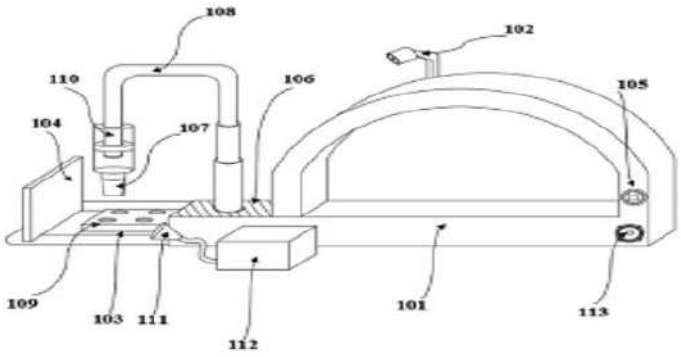

Figure 1

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031776 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MEDICATION SCHEDULE FACILITATING ASSISTIVE DEVICE

(51) International classification	:A61J0007040000, A61J0001030000, G16H0010600000, G06F0021320000, G06F0003160000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A medication schedule facilitating assistive device comprising of a hollow cuboidal body 101 developed to be utilized for storing blister packaged medicinal pills, a motorized slidable flap 103 is integrated with a top portion of each of the sections 102 to open/close the lid for allowing proper storage of medicinal pills inside the body 101, a display panel 104 arranged on the body 101 for providing input regarding medication schedule of the user, a real time clock is integrated for monitoring and maintaining a real time track, a speaker 105 integrated on the body 101 to produce audio reminder for the user to intake the user's medicine, an imaging unit 106 installed on the body 101 for capturing and processing multiple images in vicinity of the body 101 and a biometric scanner 107 arranged on the body 101 for casting impression of the user's biometric scans stored in the database.

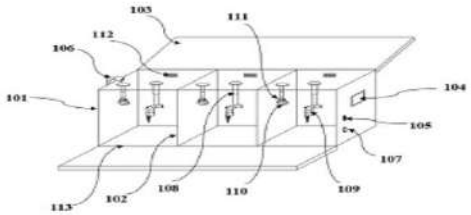

Figure 1

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202521033522 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT-Based Smart Military Helmet and Vest with Bullet Impact Detection and Soldier Health Monitoring

(51) International classification :A61B0005110000, F41H0001020000, A42B0003040000, A41D0013018000, G08B0021020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention introduces a Smart Military Helmet and Vest System designed to improve the safety and operational efficiency of soldiers in combat and high-risk environments. This integrated wearable solution combines impact detection, GPS-based real-time tracking, and automated airbag deployment, offering critical support immediately after incidents such as bullet impacts or falls from height. The helmet is embedded with sensors that detect high-velocity impacts. When forces exceed a defined threshold, a communication module is triggered, transmitting the soldier's precise GPS coordinates to nearby military or paramedical units using GSM, GPS, or IoT modules. Data, including impact force and location, is continuously monitored and visualized through ThingSpeak, a cloud-based IoT analytics platform. The vest complements the helmet with an intelligent airbag system that protects against injuries from falls—a common threat in mountainous or airborne missions. Using an accelerometer, gyroscope, and fall detection algorithm, the vest monitors movement and orientation. On detecting a critical fall condition, it deploys airbags within milliseconds to reduce the risk of spinal, cranial, or internal injuries. It also features a redundant GPS and communication system to ensure the soldier's last known location is transmitted for immediate medical evacuation. A major innovation lies in the seamless integration of the helmet and vest into a unified system that functions autonomously, providing real-time situational awareness, injury detection, and automatic emergency response—without requiring manual input. This hands-free, synergistic operation reduces response time, enhancing survivability in combat. The system is modular, customizable, and adaptable across various military uniforms and environments. Additionally, its novel hardware configuration, sensor placement, and algorithmic interactions present strong potential for design and utility patent claims. Overall, this invention marks a significant advancement in proactive battlefield safety and real-time injury management.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202521033569 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Blockchain based system for transparent donation tracking in charitable trust and holy places

(51) International classification :H04L0009320000, H04L0009000000, G06F0021620000, H04L0009400000, G06Q0020400000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention relates to a blockchain-based system and method for enhancing transparency, trust, and accountability in the collection, management, and utilization of charitable donations made to religious institutions, including temples, mosques, churches, gurudwaras, and other sacred places. In the current donation management landscape across many such institutions, traditional methods such as manual bookkeeping or isolated digital systems are commonly used. These approaches often lack transparency, traceability, and real-time accessibility, leading to inefficiencies, donor mistrust, and potential for corruption or misuse of funds. Furthermore, there is often no centralized or accessible platform through which donors or regulatory bodies can verify how donated funds are managed or spent. To address these longstanding challenges, this invention proposes the integration of blockchain technology into the donation management systems of religious institutions. The proposed system employs a permissioned blockchain network that records every donation transaction in a secure, immutable, and time-stamped manner. Unlike conventional ledgers, the blockchain ensures that once a donation record is created, it cannot be modified or deleted, thereby offering a tamper-proof solution for financial accountability. The invention features the use of smart contracts—automated digital protocols embedded within the blockchain—to streamline key functions such as issuing donation receipts, updating donor records, managing fund allocations, and enforcing institutional policies regarding the use of donated resources. These smart contracts eliminate the need for manual intervention, reduce administrative errors, and provide an efficient, automated approach to donation management. The system includes separate user interfaces tailored to donors, administrators, and government regulators. Donors can make contributions via digital payment gateways and immediately receive a verifiable digital receipt recorded on the blockchain. They can also review their past donations, track fund utilization, and opt for anonymous or pseudonymous giving, with full control over their privacy settings. Administrators of religious institutions are provided with a dashboard to monitor donations, oversee fund disbursement, generate reports, and engage with donors through secure communication tools. Regulatory bodies, on the other hand, are granted read-only access to monitor and audit donation data across multiple institutions to ensure compliance with financial and legal norms. In addition to fostering transparency, the system also ensures data privacy and integrity through strong encryption techniques and role-based access control. Donor identities are protected, and only authorized personnel can access sensitive data. Moreover, the system can be customized for each institution's specific requirements and scaled as needed. This invention not only streamlines the donation management process but also builds a foundation of trust between religious institutions and the public. By providing a transparent, decentralized, and secure mechanism for managing charitable contributions, it encourages wider participation in religious philanthropy. It also assists in minimizing corruption, improving regulatory oversight, and promoting ethical fund utilization. Ultimately, the system leverages cutting-edge blockchain technology to transform religious donation ecosystems into accountable, secure, and participatory platforms that align with the expectations of modern society.

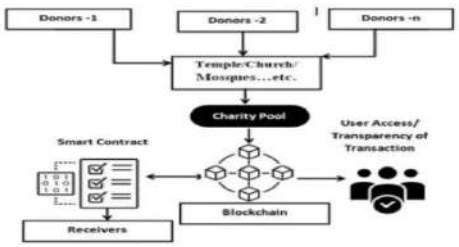

Fig1. Integration of Blockchain in Charitable Donations

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025

(21) Application No.202521033590 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : System for Automated Risk Assessment and Mitigation in Business Operations

(51) International classification :G06Q 10/0635, G06N 20/00, G06F 40/30 , G06Q 10/0635, G06N 20/00, G06Q 10/067, G06F 40/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The System for Automated Risk Assessment and Mitigation in Business Operations is an AI-driven framework designed to enhance risk management across various industries. The system integrates advanced machine learning (ML), natural language processing (NLP), predictive analytics, and real-time data monitoring to identify, assess, and mitigate business risks effectively. By leveraging structured and unstructured data sources, the system offers dynamic, real-time risk intelligence, ensuring proactive decision-making for organizations. This system operates through five key modules: Data Acquisition and Integration, Risk Assessment Engine, Mitigation Strategy Generator, Real-time Monitoring Dashboard, and Automated Reporting and Compliance Module. The Data Acquisition and Integration Module collects data from multiple sources, including internal business records, external market trends, IoT sensors, and regulatory databases. Advanced preprocessing techniques such as noise filtering, anomaly detection, and data normalization ensure high-quality inputs for risk analysis. The Risk Assessment Engine utilizes AI-driven algorithms to identify and quantify risks. NLP techniques extract risk-related data from financial reports, regulatory documents, and social media, while ML models such as Decision Trees, Random Forest, and Bayesian Networks assign probability scores to identified risks. Additionally, predictive modeling tools, including Monte Carlo simulations and reinforcement learning algorithms, provide foresight into potential risk scenarios and their impacts. Once risks are assessed, the Mitigation Strategy Generator prescribes tailored solutions using AI-based prescriptive analytics. The system recommends risk control measures based on historical data, industry benchmarks, and real-time conditions. Automated workflows enable immediate response mechanisms, such as triggering alerts to risk managers, initiating compliance reports, or implementing security protocols. This adaptive risk mitigation framework continuously improves through machine learning, refining strategies based on historical outcomes. The Real-time Monitoring Dashboard provides an interactive interface for businesses to visualize risk assessments, track mitigation progress, and analyze risk trends through heatmaps, alerts, and scenario analysis tools. This dashboard enhances situational awareness and enables organizations to respond swiftly to emerging risks. Additionally, the Automated Reporting and Compliance Module ensures regulatory adherence by generating compliance reports, cross-referencing business operations with industry standards, and maintaining a blockchain-based audit trail for transparency and accountability. The system finds applications across diverse industries. In the financial sector, it enhances fraud detection, credit risk assessment, and regulatory compliance monitoring. In supply chain and logistics, the system optimizes supplier risk analysis, transportation risk mitigation, and real-time decision-making. Healthcare organizations leverage the system for patient safety assessments, equipment failure predictions, and compliance with medical regulations. Manufacturing industries integrate the system for predictive maintenance, quality control, and operational risk management. Security and privacy considerations are paramount, with the system incorporating end-to-end encryption, role-based access control, and adherence to data protection regulations such as GDPR and HIPAA. The scalable architecture allows for seamless integration with quantum computing advancements, enhanced NLP capabilities, and AI-powered self-learning models, ensuring continued improvement in risk assessment and mitigation strategies.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202521033596 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Menthol Face Wash for Skin and Preparation Method Thereof

(51) International classification :A61Q0019000000, A61Q0019100000, A61K0036534000, A61K0008978900, A61K0008420000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a menthol-based face wash formulated to cleanse the skin while providing a distinct cooling sensation, particularly beneficial for sensitive skin. Menthol, a compound naturally found in mint plants like peppermint, is known for its cooling and soothing effects and is widely used in cosmetic applications. This face wash aims to effectively remove impurities without causing dryness or irritation. The formulation incorporates key ingredients such as water, menthol oil, xanthan gum for thickening, glycerine for moisturizing, rose water for fragrance, sodium laureth sulfate as a foaming agent, ajwain juice for coloring, and citric acid to adjust pH. The preparation involves a specific methodology to ensure stability and efficacy. Evaluation tests were conducted on the formulated face wash to assess its physical and chemical properties, including color, odor, consistency, pH, spreadability, washability, grittiness, foamability, viscosity, and potential for irritation, confirming its suitability for intended use. (Accompanied Figure No. 6)

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025

(21) Application No.202521033602 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CryptoDonation: A Blockchain-enabled System for Transparent and Fraud-proof Charity

(51) International classification :G06Q0030027900, H04L0009000000, H04L0009320000, G06Q0020060000, G06Q0020380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention relates to a decentralized, blockchain-based donation system built on the Ethereum network, aimed at ensuring transparency, trust, and accountability in the fundraising ecosystem. Traditional donation systems suffer from opacity, mismanagement of funds, and lack of donor involvement post-contribution. The proposed invention addresses these issues by introducing a smart contract-powered infrastructure that governs fundraising campaigns through predefined, milestone-based logic with verifiable, on-chain donor participation. The system enables campaign creators to launch fundraising initiatives with clearly structured objectives and associated milestones. Each campaign is governed by an autonomous smart contract that immutably records campaign parameters including funding goals, timelines, and task-based milestones. Donors contribute funds in cryptocurrency directly to the campaign smart contract using verified blockchain wallets. Their contributions are recorded on-chain, enabling full traceability and auditability. A core innovation of the system lies in its milestone-bound fund release mechanism. As campaign creators execute project tasks, they are required to upload evidence of progress to a decentralized storage system. Donors then verify the submitted content and cast approval votes using their blockchain identities. The system only disburses the allocated funds for a milestone upon majority donor consensus, ensuring that donations are spent responsibly and transparently. In the event of campaign delays, failed milestones, or lack of approval, the contract supports an automated refund mechanism, allowing donors to reclaim their unutilized contributions. Additionally, the system operates without centralized intermediaries, reducing administrative overheads and mitigating risks of manipulation or misappropriation. The invention provides a secure, trustless, and participatory framework for charitable giving, empowering donors with decision-making authority and real-time visibility. It significantly enhances the credibility of crowdfunding efforts, making it especially suitable for NGOs, disaster relief, community development, and grassroots innovation funding in both local and global contexts.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025

(21) Application No.202521033607 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GROWER: ENTREPRENEURS SOCIAL MEDIA PLATFORM

(51) International classification	:G06Q 50/00, G06Q 30/0279, G06Q 30/02
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract A computer-implemented social media platform for entrepreneurs, designated as "GROWER: ENTREPRENEURS SOCIAL MEDIA PLATFORM," is disclosed. The invention provides an integrated ecosystem that facilitates the networking, collaboration, and funding of entrepreneurial ventures through a full-stack web application. The platform comprises a dynamic frontend module, implemented using server-side rendering and responsive styling frameworks, and a robust backend module constructed on a full-stack development framework interfaced with a relational database via an object-relational mapping tool. The system integrates external application programming interfaces—including those for user authentication via third-party credentials, artificial intelligence–driven text generation and editing, and premium subscription management—thereby enhancing its functionality. An inventive dynamic networking and match-making engine automatically analyzes user profiles and interaction metrics to generate tailored recommendations that pair entrepreneurs with venture capital entities. The platform further provides filtering mechanisms, real-time notifications, customizable user interface options including dark mode, and advanced security measures such as role-based access control and multi-factor authentication. Containerization and orchestration technologies are employed to ensure scalable, secure, and resilient deployment of the system.
DATED: 06th day of April, 2025

No. of Pages : 19 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025

(21) Application No.202521033649 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CHARGING GUN UNIT FOR ELECTRIC VEHICLE

(51) International classification :B60L53/12, B60L53/16, H02J50/10, H02J7/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A charging gun unit (102) for an electric vehicle (116) is disclosed. The charging gun unit (102) comprises a first power conversion sub-unit (106) installed at a charging station converts electric power from an electricity grid (104) to a charging gun (108). A first planar magnetic coil (202), installed in the charging gun at an interfacing surface with a charging port (110), transmits electric power through electro-magnetic induction. A second planar magnetic coil (204), installed at the charging port, receives the electric power through electro-magnetic induction. A second power conversion sub-unit (112) installed inside the electric vehicle converts the received electric power to a battery sub-unit (114). The second planar magnetic coil is coaxially placed over the first planer magnetic coil by connecting the charging gun to the charging port, wherein the second planar magnetic coil is magnetically coupled to the first planar magnetic coil.

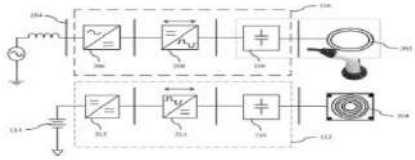

Figure 2

No. of Pages : 26 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521033716 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A GENERATIVE AI SYSTEM FOR FOOD SAFETY, GRADING, COMPLIANCE, AND PERSONALIZED NUTRITION EVALUATION

(51) International classification	:G16H0050300000, G06Q0030020100, G06F0016230000, G16H0020600000, G16H0040670000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention is a versatile AI-driven system that assigns health scores to packaged foods using Retrieval-Augmented Generation(RAG) and Large Language Models(LLM). The system assigns three key scores—Ingredient Score, Nutrition Score, and Overall Health Score (1-5 scale)—through Biodata-Agnostic and Biodata-Centric scoring modes. It integrates wearable health devices to refine personalized evaluations, dynamically adjusting scores based on real-time user metrics. A Data Lineage Tracker continuously updates vector databases by ingesting regulatory data, research studies, and e-commerce information, ensuring accurate and current food product analysis. The system employs OCR and image-to-text models for seamless data extraction and utilizes reinforcement learning to enhance LLM-generated scores iteratively. The invention enables consumers to make informed dietary choices while providing enterprises with regulatory compliance, consumer insights, and product optimization capabilities.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202521033723 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Voice-Activated AI Legal System and Method for Real-Time Courtroom Simulation

(51) International classification :G06Q0050180000, G09B0009000000, G06Q0010100000, G06F0040300000, G10L0015183000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Nemesis, a novel AI-driven platform, is designed to transform legal education in India by addressing the limitations inherent in traditional approaches that are predominantly theoretical and provide little or no opportunities for practical training. Unlike other systems dependent on general-purpose large language models and serving mainly US legal practices, Nemesis is tailor-made for Indian law and specificity and relevance are promised through the usage of frequently updated court transcripts, the Indian Penal Code, and other legal records. This makes sure the responses and arguments are right, trustworthy, and applicable to current legal standards, complete with references to each response for deeper learning. The system has a voice-activated AI legal interface to help simulate real-time legal strategy generation and replicate courtroom procedures. It combines software and hardware to provide users with a seamless, hands-free experience. The microphone and speaker act as the primary components in speech recognition and synthesis. When the user says the words "Hey Nemesis" to wake up the system, the AI-based virtual legal adversary provides realistic, real-time legal responses. It facilitates argumentation in natural speech and allows users to develop legal reasoning through vocal interaction. Nemesis provides a virtual courtroom where law students take roles as defence attorneys or prosecutors in cases regarding criminal, civil, corporate, family, and tax law. It simulates real-life case-building and argumentation so that law students can easily apply theoretical learning to practical application. The session memory will allow for revisiting and refinement of weaker areas, thus supporting a self-paced, personalized learning experience beyond the restrictions of traditional, in-person moot courts. Moving from mere generic AI-based tools lacking specificity or proper legal analysis, Nemesis affords a robust platform that contributes not only to developing personal skills but also to the general objective of improving access to quality legal education among society members. Nemesis's architecture has been built by fine-tuning LLaMA and DistilBERT models for semantic search as well as argumentative answers, a vector-embedded database such as Pinecone, using RAG for retrieval and orchestrated by LangChain. It is designed to be user-friendly and to generate context-specific outputs. Clear usage guidelines are included to afford an economically accessible solution, thereby democratizing law education in India.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202521033761 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Based Weed Detection and Growth Prediction in Smart Agriculture

(51) International classification :G06N0003080000, G06Q0010040000, A01M0021040000, H04L0067120000, E21B0047000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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(57) Abstract :
The present invention introduces a comprehensive AI-controlled weed control and growth prediction system that deals with weed management in modern agriculture. To integrate Yolo (you are only looking for real-time, non-crude discretion and LSTM (long short-term memory) for predicting weed growth trends, providing an end-to-end solution that minimizes manual work and reliance on chemical herbicides. Weeds are determined with high accuracy, divided into different growth stages, and pursued over time to predict future distributions based on historical data. The system uses high-resolution imaging recorded via a drone or field camera. This is processed on cloud-based computing devices to facilitate rapid detection and analysis. Yolo's real-time object detection capabilities allow weeds to be accurately localized and classified even under complex field conditions. The LSTM model increases this by examining weed progress in time and provides positive farmers insight into when and where interventions are important. This approach significantly reduces overuse of herbicides, leading to cost savings and reduced environmental impact. The solutions are also scalable and robust, with a variety of agricultural sizes, using scenarios ranging from small family-owned actions to vast trading areas. Its modular architecture allows for seamless integration between existing precision farm tools and IoT infrastructure (the Internet of Things). This invention is useful through the provision of accurate recognition, predictive knowledge and automated decision support.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202521033787 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Automated Eye Condition Detection Software

(51) International classification	:G16H0050200000, G16H0040670000, G16H0080000000, A61B0005000000, G16H0040200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention here before presented provides an improved automated eye screening system using up-to-date image-processing and artificial intelligence (AI) algorithms for rapid and precise evaluation of eye health. The automation of the screening helps in improving accessibility to eye care, especially where medical professionals are limited. Conventional eye tests involve physical evaluation by experts, and thus the process is slow and less convenient in far-flung areas. This invention solves these problems by mechanizing diagnosis, allowing for quicker and more accurate detection of vision disorders like refractive errors, cataracts, glaucoma, and retinal disorders. Early intervention is important in avoiding serious vision loss, and this system allows for timely medical intervention. The essence of this technology is that it's AI-based, which reduces human intervention to a considerable extent, providing consistent outcomes, and being suitable for mass screenings. It is especially useful for use in rural or developing areas where there are fewer ophthalmologists. Integrating the system within hospitals, clinics, and mobile health units greatly increases the accessibility of eye care services. Besides assisting healthcare professionals, this automated screening lightens their workload by taking care of routine evaluations so that they can concentrate on serious cases. The high accuracy and speed of analysis of the system make it a practical solution for mass adoption in digital healthcare. Overall, this invention revolutionizes eye screening by making it more efficient, faster, and accessible to many people. Its ability to diagnose vision problems early and minimize the workload for medical practitioners makes it a valuable asset towards enhancing global eye health.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202521033988 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A System for Multi-Document Summarization in Biomedical Domain Using Deep Learning Techniques

(51) International classification :G06N0003080000, G06F0040300000, G06N0003045000, G06F0016340000, G06F0016330000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract A System for Multi-Document Summarization in Biomedical Domain Using Deep Learning Techniques The present invention discloses a system for multi-document summarization in the biomedical domain that leverages advanced natural language processing and deep learning techniques to extract and present essential information from multiple sources. The system includes a pre-processing module, a domain-specific language model, a hybrid summarization engine with both extractive and abstractive units, an evaluation module, and an output module. It is specifically designed to handle the dense and complex nature of biomedical texts, addressing challenges related to redundancy, coherence, and relevance. By intelligently condensing large volumes of data, the system supports efficient information retrieval for researchers and healthcare professionals. Figure 1.

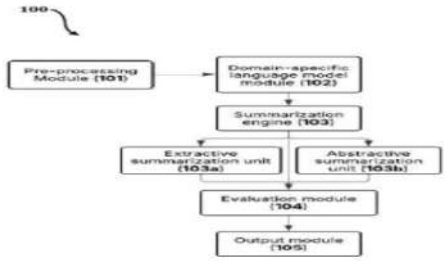

Figure – 1

No. of Pages : 22 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202521033989 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : VENDOR CART PLACEMENT RECOMMENDATION SYSTEM

(51) International classification	:G06Q0030060100, G06F0009500000, G06Q0030028300, G01C0021360000, G01C0021200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A vendor cart placement recommendation system, comprising plurality of bodies 101 developed to be positioned on a ground surface by means of multiple motorized wheels 103, an artificial intelligence-based imaging unit 104 detects pedestrians, objects, and obstacles, a GPS unit identify geographical location of bodies 101 and categorize area as residential, commercial, or mixed-use, a network of sensors collect real-time data on various environmental parameters, a parameter weighting module assign different weights to detected parameters to generates a heat map displaying locations with varying values on a user-interface inbuilt for allowing vendor(s) to identify most suitable areas for cart placement, and a predictive pricing recommendation module suggests an appropriate price for item based on type of product and description.

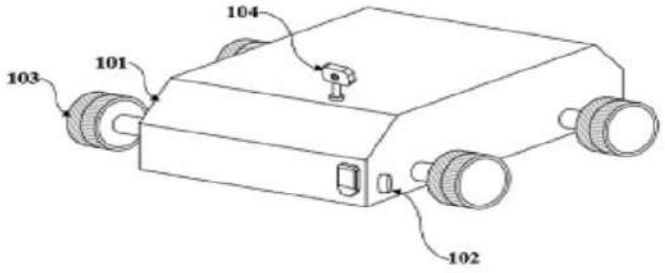

Figure 1

No. of Pages : 24 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521034031 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ML-Based Political Sentiment Analysis System for Social Media Data

(51) International classification :G06F40/30, G06F16/35, G06F40/284

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: The invention discloses a machine learning-based political sentiment analysis system for extracting, classifying, and visualizing public sentiment from social media platforms in real time. The system comprises modules for data collection, linguistic preprocessing, sarcasm detection, multilingual translation, and contextual sentiment classification. It employs advanced deep learning models, including transformer-based embeddings and hybrid neural networks, to determine sentiment polarity, political orientation, emotional tone, and stance. A contextual mapping unit links sentiments to specific political figures, parties, and topics, while a knowledge graph and dashboard provide interactive visual analytics. The system supports adaptive learning to update its models based on evolving language patterns, hashtags, and political events. It can detect disinformation and bot-generated content, ensuring authentic sentiment representation. Designed for scalability and multilingual environments, the system offers a powerful tool for governments, analysts, media, and researchers to track and interpret political discourse across diverse demographics and platforms.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202521034087 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Multi-Platform (Web & Android) College Bus Management Solution

(51) International classification	:G06Q0050200000, G06Q0050400000, G08G0001123000, H04L0041220000, G06F0021560000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The modern world is guided by the change in the technology day by day. Mostly the relevant changes in technologies are enhancing the modern business techniques. Different technologies have been developed in the world for making people's life easier and better day by day. Android is the latest and a rapid growing technology available for all the users or users in today's market. An enormous increase in the end user acceptance has been experienced in the past few years. The technique "Multi-Platform (Web & Android) College Bus Management Solution" is based on the latest GPS technology which enables college management team a better way to keep eye on the activity of the college buses and manage schedule as well as provide real time bus location for the students using bus service.The College Bus Management System is Web & Android system aimed at students, college administration to maintain bus facility. The system takes student information as input source and attempts to maintain the bus services. It allows flexibility during these processes.The system generates exhaustive reports related to the Bus Management i.e. Fees paid, dues, rout no. & bus stop.To overcome the problems of manual bus management system, We have developed Web & Android Based college bus management System.College bus management System is based on Android & Web, which can be implemented on any Android Phone.The reports highlight various bus services and features of the bus, which can be subjected to improvements especially for the college administration to improve bus transport system.The system requires comparatively small amount of resources such as memory, input/output devices and disk space.The system overall keeps approach in highlighting key features of the bus services. It provides the facility of tracking the particular college bus's location in the google map. They can also view the bus details such as bus schedule and they reach the bus on time.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034091 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR REMOTE CONTROL OF SMART SWITCH.

(51) International classification	:G05B0019042000, H04L0012280000, G05B0015020000, H04L0009400000, A47B0081060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
SYSTEM AND METHOD FOR REMOTE CONTROL OF SMART SWITCH. The present invention discloses a remote control operated system and method for switching mechanism of smart modular switch and smart modular rotary switch; using a permanent magnet and enameled metal coil based actuators. The invention relates to a remote control, Internet of things (IOT) and home automation system for controlling manually operable modular switches. The features of the remote control system and method also provide simplest but secure way to monitor and control multiple user household rooms while being very cost effective for industrial production. The system also provides safety, manual accessibility, remote control, sensor based control and server based control. The uniqueness of this invention lies in simple operation, reliable and durable design because of contactless operation of the actuators of smart modular switch.

No. of Pages : 31 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034266 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A NOVEL FORMULATION OF HERBICIDES AND PROCESS OF PREPARATION THEREOF

(51) International classification	:A01N0043840000, A01N0033180000, A61P0025040000, A61P0009000000, A01N0025300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A NOVEL FORMULATION OF HERBICIDES AND PROCESS OF PREPARATION THEREOF The present invention discloses a novel formulation of herbicides. Moreover, the sai novel formulation of herbicides is of Flumioxazin technical and Pendimethalin technical. The composition exhibit resistance to settling of solid particles on storage and having enhanced effectiveness on broad range of weeds with synergistic effect and boosts plant growth. The present invention further relates to a novel formulation of herbicides with syngystic nutrients and the process for preparing the same.

No. of Pages : 24 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202521034343 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PORTABLE LIGHT EMITTING DIODE-BASED DEVICE FOR DEMONSTRATING SINGLE-SLIT DIFFRACTION PHENOMENA

(51) International classification	:F21Y0115100000, G01N0021640000, G09B0023220000, A61B0005000000, A61B0017000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a portable light emitting diode-based device for demonstration of single-slit diffraction phenomena. The device comprises an LED source housed within a guide tube that directs emitted light towards a slit assembly. An alignment ring ensures precise centering of the LED, while a fixture provides structural support and thermal dissipation. The slit assembly, positioned at the distal end of the guide tube, features an adjustable slit to control diffraction effects. As light passes through the slit, it undergoes diffraction, forming an interference pattern on a display surface designed for clear visualization. The device offers a compact and efficient solution for illustrating wave optics principles, eliminating the need for complex optical setups.

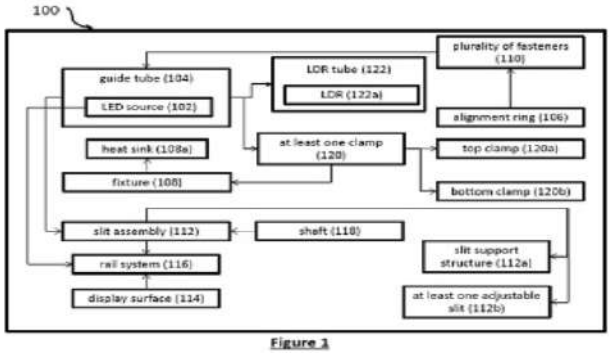

Figure 1

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034451 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Autonomous AI-Based Adaptive Cooling System for High-Performance Industrial Machines

(51) International classification :G06N0020000000, F25D0029000000, G05B0023020000, H04L0067120000, B60L0050600000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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3)Dr. Rovin Tiwari

4)Mrs. Pallavi N R

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(57) Abstract :

ABSTRACT Autonomous AI-Based Adaptive Cooling System for High-Performance Industrial Machines The present invention discloses an autonomous AI-based adaptive cooling system designed to manage and optimize the thermal performance of high-performance industrial machines. The system integrates temperature sensors, environmental sensors, and workload monitoring units to continuously gather real-time operational data. This data is processed by an onboard AI control unit that utilizes machine learning algorithms to forecast thermal loads and adjust cooling mechanisms accordingly. Unlike conventional cooling systems, which operate on fixed thresholds or manual settings, the proposed system adapts in real-time based on dynamic machine conditions and ambient environments. Cooling actuators such as fans, thermoelectric modules, or liquid cooling units are intelligently managed to ensure that machine components remain within optimal temperature ranges. The AI engine continuously refines its models through feedback loops, enabling the system to become more accurate and efficient over time. This autonomous cooling system reduces energy consumption, prevents thermal throttling, extends machine lifespan, and supports predictive maintenance. It can operate in multiple modes, including learning, prediction, emergency, and maintenance modes, and features wireless and wired connectivity for remote monitoring and control. The system is suitable for integration into both existing industrial infrastructure and newly designed high-performance machinery.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031777 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED INSULATION TAPE WRAPPING DEVICE

(51) International classification :G06K0007100000, H04W0004020000, G06V0020200000, H04L0009400000, B62B0005000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A automated insulation tape wrapping device, comprising, a housing 101 positioned over a ground surface in proximity to a wire that is wrapped with an insulation tape, a plurality of motorized wheels 102 to provide translation to housing 101, an imaging unit 103 installed with a proximity sensor for capturing and processing images of wire, a pneumatic scissor 104 to extend position, a robotic arm 105 to position a pair of C-shaped members 107, a motorized hinge joint to orient members 107 around wire, a motorized roller 108 wrapped with an insulation tape installed to unwrap tape, a motorized gripper 109 to grips free end of unwrapped tape, a motorized sliding unit 110 to provide translation to gripper 109 around wire, a clamp meter 111 via a robotic link 112 to monitor current flowing through wire, a pneumatic cutter 113 to extend and cut tape.

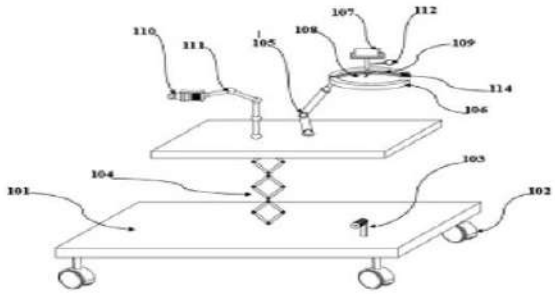

Figure 1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031778 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RUST REMOVAL ASSISTIVE DEVICE

(51) International classification :B24B0027033000, B24B0055100000, G01N0015060000, B24B0047120000, B24B0055060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A rust removal assistive device comprising of an L-shaped hollow cylindrical body 101 with a handle 102 to position the body 101 over a surface for rust removal, an imaging unit 103 to determine dimension of the user's hand, a motorized expandable pulley mechanism 104 to change dimension of the handle 102 to allow comfortable grip, a DC motor 105 attached to a circular plate 106 to rotate the pins 107 to remove the rust from the surface, an IR (Infra-red) sensor to detect distance of the rust surface relative to the body 101, plurality of pneumatic pins 107 to position the pins 107 in contact with the rust surface, a dust particle sensor to detect a concentration of airborne rust and debris generated during the rust removal process, a motorized suction unit 108 to collect and dispose the airborne rust and debris within a waste container 110.

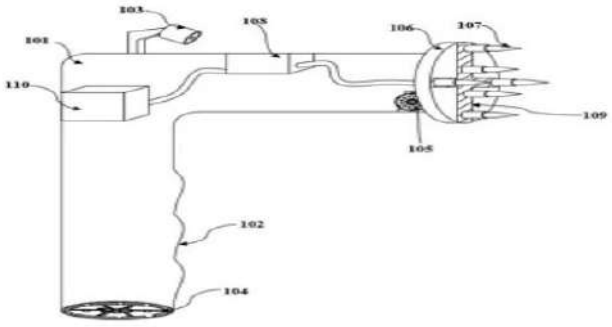

FIGURE 1

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031779 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PET ENGAGEMENT ASSISTIVE DEVICE

(51) International classification :A01K0015020000, A61B0034000000, A23K0050420000, A61B0090000000, H04R0003020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A pet engagement assistive device developed to mount on a vertical support includes a frame 101 with suction cups 102 for secure attachment, a motorized sliding unit 104 adjusts a textured flap's 103 position based on pet height, determined by an artificial intelligence based imaging unit 105 integrated, a user interface on a computing unit enables input of pet treat preferences, allowing an electronically controlled nozzle to dispense paste from a multi-sectioned chamber onto the flap 103, a vibrating unit 106 evenly distributes the paste, and the imaging unit 105 monitors pet expressions, activating a speaker 107 to produce soothing sounds if discomfort is detected, an ultrasonic sensor ensures optimal flap 103 placement. The device adapts to licking behavior, minimizes wastage, and a microphone 108 allows voice commands for observing barking/howling sounds and a display panel 109 installed on said frame 101 to provide display notifications.

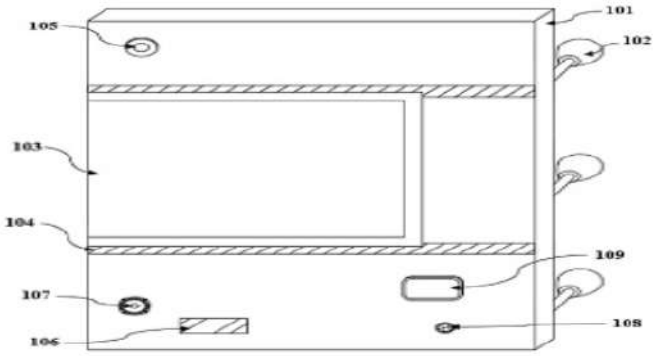

FIGURE 1

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031780 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : KNEELING TASKS MOBILITY ASSISTIVE DEVICE

(51) International classification :A61H0003000000, G10L0015220000, H04R0001100000, A61H0003060000, A61G0005040000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A kneeling tasks mobility assistive device, comprising of a hemispherical expandable frame 101 attached with a pair of expandable straps 102, developed to be accommodated on a knee portion of a user, a microphone 103 to provide input voice commands regarding requirement of movement, plurality of motorized omnidirectional wheels 104 for providing mobility to the frame 101, a Peltier unit 105 detecting temperature of surroundings, a shock absorber spring 106 installed in between the wheels 104 and frame 101, thus minimizing impact of the shocks to the user's knee portion, a speaker 107 for emitting auditory signals to provide warnings about detected obstacles or environmental conditions, improving user awareness and safety a battery is configured with the device for providing a continuous power supply to electronically powered components associated with the device.

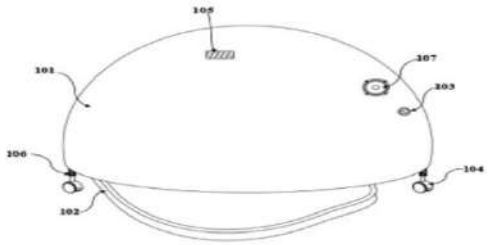

Figure 1

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031781 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CERVICAL TRACTION BASED NECK EXERCISING ASSISTIVE DEVICE

(51) International classification	:A61H0001020000, G06T0007000000, H04N0023900000, A61F0005042000, G01J0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A cervical traction based neck exercising assistive device, comprises of a rectangular frame 101 positioned on a fixed surface, multiple suction cups 102 for affixing the frame 101, a microphone 103 for receiving voice commands, an artificial intelligence-based imaging unit 104 for capturing and processing multiple images, an adjustable telescopic spreader beam 105 attached with the frame 101 via a L-shaped bar 106 for engaging neck, a motorized roller 107 coiled with a flexible strap 108 to rotate, a thermal camera 109 to measure surface temperature of skin, a pair motorized pulley units 110, each coupled with a string 111, to extend and retract the beam 105, and a touch-interactive display unit 112 is attached with the frame 101 via a L-shaped link 113 to display information to monitor therapy.

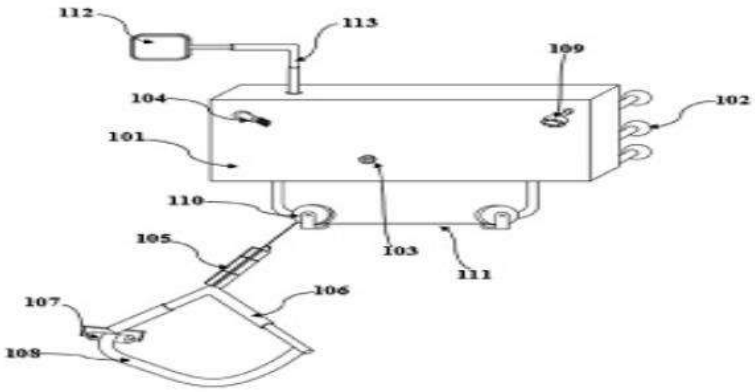

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202521031782 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTABLE HAIR BRUSH CLEANING DEVICE

(51) International classification :A47L0011400000, A46B0017060000, H04N0007180000, A46B0011000000, A46B0015000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An adaptable hair brush cleaning device comprises of a circular frame 101 attached with a fixed surface by means of a suction cup 102 configured with the frame 101 to insert a hair brush, an imaging to determine dimensions of brush and length of bristles, plurality of motorized hinge joints 105 to regulate shape of frame 101 with the detected dimensions, plurality of pneumatic pins 106 to position around base portion of the bristles, a motorized ball and socket joint 107 to enable pins 106 to extract hairs from bristles, an ultrasonic sensor to monitor thickness of dirt, a cleaning liquid reservoir 108 installed with an electronic nozzle 109 to dispense a regulated amount of liquid to soften the dirt, plurality of motorized brushes 110 to extend and place the brushes 110 in contact with the bristles to scrub and clean the soften dirt.

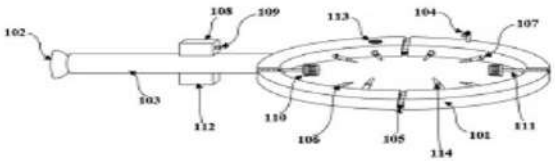

FIGURE 1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031783 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : GUTTER DOWNSPOUT EXTENSION DEVICE

(51) International classification	:E04D0013080000, E04D0013076000, F25D0023120000, A61B0003000000, H04W0004020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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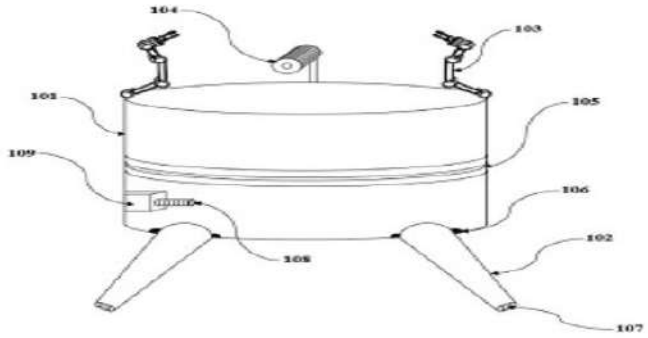
(57) Abstract :
A gutter downspout extension device, comprises of a housing 101 equipped with a pair of extendable spouts 102 for guiding water flow, a pair of motorized clamps 103 secure the housing 101 to the pipe outlet, an artificial intelligence based imaging unit 104 actuated by microcontroller that works with an ultrasonic sensor to detect pipe dimensions, a drawer arrangement 105 adjusts the housing's proximity to the ground surface, a flow sensor to detect water movement, prompting the spouts 102 to extend towards a predetermined location, a motorized iris lid 107 over the spouts 102 opens to allow water flow. Additionally, artificial intelligence based imaging unit 104 and suction unit 108 identify and remove blockages, storing debris in an integrated storage compartment 109.



Figue 1

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031784 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CORN RELIEF PROVIDING DEVICE

(51) International classification :A61F0007000000, A61B0005010000, A43B0003340000, G06F0003010000, A61H0023020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A corn relief providing device, comprising, a sole-shaped body 101 to fixed in a footwear to accommodate a user's feet, an air inflating unit 102 to reduce pressure and friction, a gel pack layered with a Peltier unit to generate heating/cooling effect, a plurality of vibrating units 103 to generate vibrational sensations, an air blowing unit 108 to blow air for eliminating the sweat, a plurality of pressure relief pads 104 to provide targeted support reducing pressure on foot corns, a laser scanning unit to detect uneven surfaces, a temperature sensor to detect temperature, an infrared sensor to detect area with swelling on the feet, a plurality of motorized hinges 106 to adjust shape of the body 101.

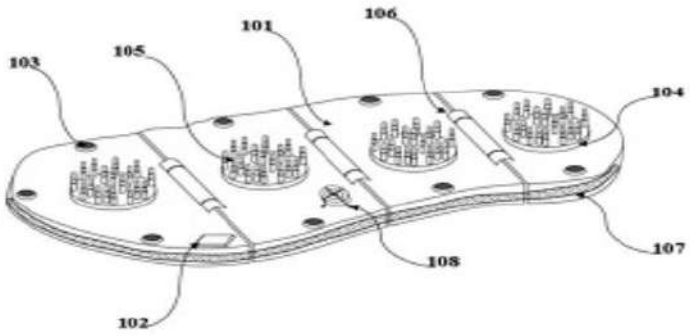

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202521034556 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND COMPOSITION UTILIZING NYCTANTHES ARBOR-TRISTIS COLORING PROPERTIES AS A PHARMACEUTICAL EXCIPIENT

(51) International classification :A61K0009200000, A61K0009000000, C09B0061000000, A61K0009160000, A61K0008970000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a novel method and composition utilizing the natural coloring properties of Nyctanthes arbor-tristis as a pharmaceutical excipient. This invention focuses on the extraction, stabilization, and incorporation of the plant-derived colorant into various pharmaceutical dosage forms, offering a natural and sustainable alternative to synthetic dyes. The colorant is extracted from the flowering stalk of Nyctanthes arbor-tristis using aqueous and alcoholic solvents, followed by characterization through Thin Layer Chromatography (TLC) and UV-Visible Spectrophotometry to determine its λmax and stability. The invention further explores the application of the extract in pharmaceutical formulations, particularly in oral liquid dosage forms such as syrups, where stability studies were conducted under different light sources. Granules were also formulated using dry granulation techniques to evaluate compatibility in solid dosage forms. A calibration curve was established to ensure precise quantification of the extract in formulations. This invention addresses the need for plant-derived pharmaceutical colorants, providing enhanced safety, stability, and potential therapeutic benefits. The use of Nyctanthes arbor-tristis extract as a pharmaceutical excipient represents an innovative step toward sustainable formulation solutions, reducing dependence on synthetic colorants while maintaining product efficacy and compliance with regulatory standards.

No. of Pages : 20 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202521034563 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADDITIVELY MANUFACTURED CIPROFLOXACIN-EMBEDDED OCULAR INSERTS FOR CONTROLLED DRUG DELIVERY

(51) International classification	:A61K0009000000, B33Y0010000000, B29C0064118000, A61P0027020000, B33Y0080000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to the development of a 3D-printed ocular insert system for controlled and sustained delivery of ciprofloxacin hydrochloride, intended for the treatment of ocular infections. This innovative platform employs polyvinyl alcohol (PVA), a biocompatible safe polymer, to fabricate drug-loaded filaments using a solvent evaporation technique. The process involves soaking PVA filaments in an ethanolic solution of ciprofloxacin hydrochloride followed by drying to achieve uniform drug impregnation either on the surface or within the polymer matrix. These drug-loaded filaments are subsequently used in fused deposition modelling (FDM)-based 3D printing to fabricate thin, sterile ocular inserts optimized for prolonged residence time in the conjunctival sac. The inserts are evaluated for physical properties, drug release behavior, and antimicrobial efficacy. In-vitro drug release studies are conducted using simulated tear fluid at physiological ocular temperature ($34 \pm 0.5°C$) and analyzed via UV-Vis spectrophotometry. Results show a controlled release profile extending up to 24 hours, improving patient compliance. This invention offers a customizable, patient-friendly drug delivery platform with applications in treating various anterior segment eye infections.

No. of Pages : 18 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034570 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SUSTAINED-RELEASE TRANSDERMAL GEL EMBEDDED IN A KNEE CAP FOR TARGETED ANTI-INFLAMMATORY THERAPY

(51) International classification	:A61K0009000000, A61P0029000000, A61K0047100000, A61K0031196000, A61K0009060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a transdermal gel formulation for the localized treatment of knee inflammatory disorders, incorporating diclofenac sodium and ibuprofen as active pharmaceutical agents. The invention aims to provide sustained pain relief while minimizing systemic side effects commonly associated with oral administration of nonsteroidal anti-inflammatory drugs (NSAIDs). A series of formulations (F1–F4) were developed by varying the concentration of Polyethylene Glycol 1500 (PEG 1500), which functions as both a humectant and a penetration enhancer, thereby influencing key gel characteristics such as viscosity, spreadability, and drug release profile. The formulations were evaluated through comprehensive physicochemical and performance testing, including pH, viscosity, spreadability, percent drug content, and in vitro drug release studies. Among the formulations, F3 (containing 11 g of PEG 1500) exhibited optimal results with skin-compatible pH, ideal viscosity for topical application, efficient spreadability, and a sustained drug release profile. The invention is intended for integration into a wearable knee cap device with a built-in drug reservoir, providing an effective, non-invasive, and user-friendly system for managing knee joint inflammation through controlled transdermal drug delivery.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031821 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE COLLISION PREVENTION AND IMPACT ABSORPTION DEVICE FOR TRAILER VEHICLE

(51) International classification	:G08G0001160000, B60H0001000000, B60T0007200000, A41D0013018000, B60D0001620000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An adaptive collision prevention and impact absorption device for trailer vehicle, featuring a rectangular frame 101 to fix with rear side of a trailer vehicle by means of multiple suction units 102 and electromagnetic clamps 103, a laser sensor integrated on the frame 101 to determine dimension of the rear side of the trailer vehicle, a telescopic arrangement integrated in the frame 101 for covering entire the rear side, an imaging unit 106 installed on the frame 101 and synced with a sensing module to detect approaching of any vehicle and speed and distance between the rear side and approaching vehicle, an air inflating unit 107 integrated with the frame 101 to inflate multiple inflatable member 108 configured with the frame 101 and rods, and multiple damping units 111 integrated with the frame 101 to reduce impact force transferred to the trailer vehicle.

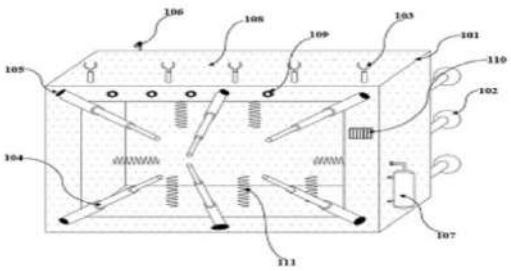

Figure 1

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202521031822 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FEET SCOURING DEVICE

(51) International classification :H01L0021670000, A47L0013160000, G06K0007140000, G06F0003033000, H04W0072020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A feet scouring device comprising of a wedge shaped hollow body 101 having a first section 102, a second section 103 having raised edges, and a third section 104, developed to be positioned on a fixed surface and configured with multiple suctions cups 105, to be adhered with surface in view of mounting the body 101, an audio unit 106 installed on the body 101 to generate audible instructions to notify user to place the feet over first section 102, a timer module is integrated to keep track of time on scrubbing by the rollers 107, plurality of motorized scrubbers 109 arranged on each the plates 108, for scrubbing the feet, to remove dirt, plurality of chamber 110 housed in the second section 103 to store cleaning solutions, an electronically controlled nozzles 111 configured with plate 108 and connected to chambers 110, to dispense cleaning solutions on feet.

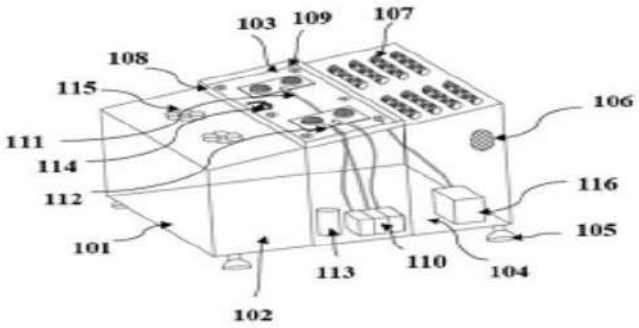

Figure 1

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521032028 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SOLID RETENTION GRATING MODULE FOR SEWAGE SYSTEM

(51) International classification	:E02D0029140000, E03F0005040000, E03F0001000000, C02F0003120000, E03F0005060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A solid retention grating module (SRG) for a sewage system wherein the SRG is having multiple layers with each layer equipped with holes and the size of holes can be flexible like 4/6 mm at bottom, 6 mm in fourth, 8 mm in third, 10 mm in second and 12 mm at top to permit flow of liquid through it, and to further avoid formation of dead pockets. The SRG shape could vary, hemi-spherical, funnel for sewage. But it could be cubical square/ rectangular shape for storm water drainage. The SRG module is installed between manhole cover and opening end of the sewage or drain pipe to prevent entry of large solids having size more than 4/6 mm, wherein the SRG module will have openings ranging between 4 mm to 12 mm to permit only liquid and all solids will be retained. Fig 1

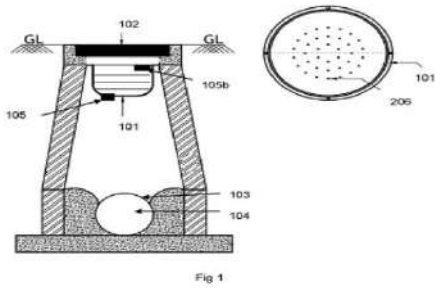

Fig 1

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034573 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A MOBILE APPLICATION FOR RECREATIONAL SUITABILITY OF BEACH LOCATIONS IN INDIA

(51) International classification :G06Q0050140000, G06Q0050260000, B63B0049000000, G08G0001160000, E02B0003040000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This project presents the development of Sagar Setu, a mobile application aimed at enhancing coastal tourism safety in India by providing real-time beach suitability updates. With increasing tourist activity along Indian coastlines, there is a growing need for a reliable, centralized platform that informs users about oceanic and weather conditions to help them make safe travel decisions. The app utilizes data from INCOIS and weather APIs to assess parameters such as wave height, wind speed, water quality, UV index, and tide levels. Sagar Setu incorporates an intelligent decision-making system that categorizes beaches into safety levels (Safe, Moderate Risk, High Risk) and visualizes this data through color-coded geospatial maps. The application also integrates features like personalized alerts, navigation assistance, and details on recreational activities, making it a one-stop solution for beachgoers. This report explores the motivation, methodology, and system architecture behind the application, addressing challenges such as data integration, real-time monitoring, and user engagement. By promoting informed and responsible travel, Sagar Setu contributes to safer tourism and supports the Indian government's vision under the Blue Economy Policy.

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202521034580 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE LEARNING-BASED APPROACHES FOR AUTOMATED ASSESSMENT AND GRADING SYSTEMS IN HIGHER EDUCATION

(51) International classification :G06N0020000000, G06Q0050200000, G09B0007020000, G06N0020200000, G06N0003088000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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11)PROF. MS. JYOTI UPADHYAY
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(57) Abstract :
ABSTRACT MACHINE LEARNING-BASED APPROACHES FOR AUTOMATED ASSESSMENT AND GRADING SYSTEMS IN HIGHER EDUCATION The present invention relates to the higher education automated assessment and grading 5 10 15 systems have been transformed by the quick development of machine learning (ML), which has improved efficiency, accuracy, and equity. While ML-based systems use computer vision, deep learning, and natural language processing (NLP) to assess a variety of student submissions, such as essays, code, and assignments, traditional grading methods frequently face issues with subjectivity, consistency, and scalability. Personalized feedback, anomaly detection, and predictive analytics are made possible by supervised and unsupervised learning approaches, which enhance learning results and student engagement. By integrating with learning management systems, these technologies lessen the strain of instructors while guaranteeing smooth grading for extensive courses. Notwithstanding its advantages, problems including algorithmic bias, data privacy issues, and the requirement for ongoing model refinement still exist. This study examines the efficacy of several machine learning (ML) approaches used in automated grading as well as the potential applications of AI-driven educational evaluations in creating inclusive and flexible learning environments.

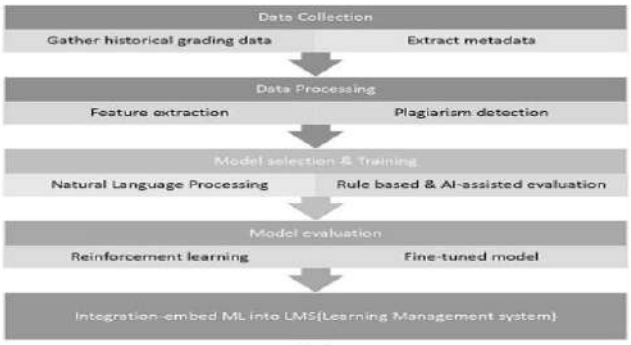

FIG.1.

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202521031785 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED COW DUNG CAKES MANUFACTURING DEVICE

(51) International classification	:B62B0005000000, B60R0021237000, B66F0009060000, C10L0005420000, A47F0010020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An automated cow dung cakes manufacturing device, comprises of a housing 101 configured with plurality of motorized wheels 102 that provides translation, a multi-sectioned chamber 103 stored with various biomaterials, a touch interactive display panel 104 to provide input details, an iris lid 105 to dispense a regulated amount of the biomaterials within a mixing container 106 via a plurality conduit 107, a motorized stirrer 108 to produce a mixture, an electronically controlled valve 109 to dispense the mortar mixture in a pipe 110 and transfer over a hollow cylindrical member 111, a hydraulic actuator 112 to transfer of biomaterial mixture, a motorized sliding gate 113 to open, for dumping, an expansion pulley 114 mechanism to expand/ contract, an extendable flap 115 to remove dust.

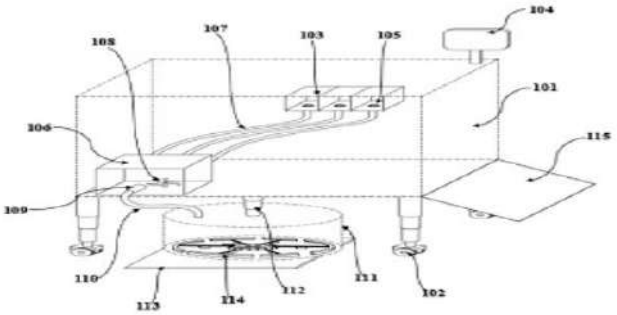

Figure 1

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/11/2023

(21) Application No.202341075508 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : PARCEL STORAGE SYSTEM THAT REDUCES MOVEMENTS AND OPERATIONS PERFORMED BY AN ENTITY FOR DISCHARGING AND RETRIEVAL OF PARCELS

(51) International classification	:G06Q0010080000, B65G0001040000, B25J0015000000, B65G0047310000, A63B0069400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention relates to a space-saving parcel storage unit (100) designed to enhance storage efficiency and improve ergonomic handling of parcels. This storage unit incorporates one or more storage containers (108A-N), one or more flaps (110A-N) arranged in a predetermined configuration, and a lever unit (112) that controls the movement of the one or more flaps (110A-N). The parcel storage unit effectively reduces the need for at least one entity (102), whether human operators or automated machines, to reach into hard-to-access areas within the parcel storage unit that may pose challenges due to depth, height, or obstruction by other components.

No. of Pages : 21 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/01/2024
(21) Application No.202441004085 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTONOMOUS RIGHTING PLATFORM SYSTEM FOR A TROLLEY FOR FUNICULAR

(51) International classification :B61B0009000000, B61B0012120000, B65G0023380000, B61B0012000000, B63C0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Accordingly, the present invention provides an autonomous righting platform system (100) for a funicular. The autonomous righting platform system (100) comprises an arc (10) mounted on a frame (12) to move there along. Further, the autonomous righting platform system (100) comprises a trolley (50) with a platform (16) having floating base, wherein the platform (16) is adapted with a plurality of wheels (18) underneath which make the platform (16) to freely move over the arc (10). Furthermore, the autonomous righting platform system (100) comprises incentive load (A) configured below the platform (16) to lower center of gravity (CG) of the platform (16).

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2024

(21) Application No.202441009494 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE WITH MECHANICALLY ADJUSTABLE CHAIN TRENCHER ASSEMBLY FOR TRENCHING AT USER-DEFINED WIDTHS AND METHOD THEREOF

(51) International classification :B66C0023700000, E02F0005060000, E02F0003100000, E02F0003080000, E02F0003140000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT MACHINE WITH MECHANICALLY ADJUSTABLE CHAIN TRENCHER ASSEMBLY FOR TRENCHING AT USER-DEFINED WIDTHS AND METHOD THEREOF The present invention discloses a machine with mechanically adjustable chain trencher assembly for trenching at user-defined widths and method thereof. The machine (100) comprises a locking assembly (112, 114) to perform one of: locking and unlocking one or more pairs of wheels (110) during trenching and transportation, respectively. The machine (100) comprises a gear box assembly (116) to receive rotational power from the host vehicle and transmit the rotational power to a driving shaft (122). A driven shaft (124) is configured with at least two split sprockets (128) is driven by the driving shaft (122). The machine (100) comprises a holding frame (130) is configured to hold at least two adaptable boom assemblies (132) in alignment with the at least two split sprockets (128) respectively at the defined distance. The at least two adaptable boom assemblies (132) guides trencher chains (138) for trenching at the user-defined widths. Figure 1A

No. of Pages : 54 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2024

(21) Application No.202441009495 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : TRENCHING MACHINE WITH MECHANICALLY-ADJUSTABLE TRENCHING MECHANISM FOR PROVIDING DIVERSE TRENCHING OPERATIONS AND METHOD THEREOF

(51) International classification :E02F0005060000, E02F0005100000, E02F0003100000, E02F0003140000, E02F0005080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT TRENCHING MACHINE WITH MECHANICALLY-ADJUSTABLE TRENCHING MECHANISM FOR PROVIDING DIVERSE TRENCHING OPERATIONS AND METHOD THEREOF The present invention discloses a trenching machine with a mechanically-adjustable trenching mechanism for providing diverse trenching operations and a method thereof. The trenching machine (100) comprises a locking assembly, a first gear (108), a second gear (110), and a holding frame (112). The trenching machine (100) comprises a pair of trailer hitches (104aa, 104ab, 104ac, 104bb, 104bc, and 104bd) provides an adaptable connection between the trenching machine (100) and a host vehicle. The locking assembly selectively one of: locks and unlocks each wheel (116) during the diverse trenching operations and the transportation, respectively. The second gear (110) transmits rotational power from the first gear (108) to a drive shaft (136) with optimised torque. The holding frame (112) partition the drive shaft (136) to provide one of: a middle partition (182) and a side partition (184) for one of: the middle trenching operation and the side trenching operation, respectively. Figure 1A

No. of Pages : 48 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/02/2024

(21) Application No.202441012810 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ELECTRODYNAMICALLY SYNCHRONIZED DC TO AC INVERTER/CONVERTER SYSTEM

(51) International classification	:H02P23/04, H02M1/14, H02M1/44, H02M5/458, H02M7/04, H02M7/5387
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

7. ABSTRACT The present invention relates to an electrodynamically synchronized DC-to-AC inverter/converter system (100) that generates a near-sinusoidal output with minimal reliance on high-frequency power electronic switching. A motor-driven cyclic connector (114) sequentially connects multiple voltage stages from a battery or capacitor bank (104), forming a stepped waveform that is smoothed by a reactor (140). In standalone mode, a DC shunt motor (112DM) provides the necessary rotation; for grid-tied operations, a synchronous motor (112SM) automatically locks the output to the grid frequency. The high-current flow bypasses the motor windings, reducing switching losses, electromagnetic interference, and complex gating circuits. Protective devices (116) isolate fault conditions, while optional transformers (130) enable voltage stepping or galvanic isolation. By avoiding high-frequency gating, the invention offers robust, efficient performance for renewable energy systems and other power electronics applications. Simplicity and scalability make it ideal for industrial applications. The figure associated with the abstract is Figs. 3a & 3b.

No. of Pages : 31 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/03/2024
(21) Application No.202441020304 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYNERGISTIC AGROCHEMICAL COMPOSITION COMPRISING DIAMIDE INSECTICIDE

(51) International classification :A01N43/56, A01N25/04, A01N25/14, A01N31/02, A01N37/46, A01N45/00, A01N51/00, A01P7/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to stable synergistic agrochemical comprising insecticides and plant growth regulator which acts as a plant growth & health promoter and manufacturing method thereof.

No. of Pages : 45 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2024

(21) Application No.202441026733 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SELF-BALANCING TWO-WHEELER VEHICLES/SEGWAY

(51) International classification :G05D0001020000, B62K0011000000, B62M0006900000, A47L0011240000, H05K0007140000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
TITLE OF INVENTION: THE SELF-BALANCING TWO-WHEELER VEHICLES/SEGWAY ABSTRACT: Abstract of the Invention: A utility model discloses a self-balancing two-wheeled vehicle/Segway, featuring a hexagonal chassis (200) and a C-U wheel-to-chassis (400) linkage mechanism. The chassis (200) is constructed with a honeycomb mesh structure, providing strength and stability while allowing for controlled tilting of the wheels (101, 102). The C-U linkage mechanism (400) securely attaches the wheels to the chassis, enabling easy attachment and detachment for maintenance. A motorized drive system, coupled with a feedback controller, uses real-time data from a 6-axis Inertial Measurement Unit (IMU) to continuously adjust motor output and maintain balance. The present invention also includes a method for controlling the vehicle, processing rider inputs and IMU data to generate control signals for the wheels, ensuring reliable stability and dynamic movement. The design optimizes structural integrity, lightweight construction, and ride comfort, particularly over varied terrains.

No. of Pages : 30 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :09/04/2024
(21) Application No.202441028781 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HYDRAULIC POWER BASED SYSTEM FOR AUTOMATIC DOZER BLADE ANGLING & TILTING

(51) International classification :E02F0003760000, E02F0009200000, G05G0009047000, F04D0025060000, G06N0005040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT HYDRAULIC POWER BASED SYSTEM FOR AUTOMATIC DOZER BLADE ANGLING & TILTING The present invention relates to the hydraulic power based system for automatic dozer blade angling & tilting. This invention facilitates position of the blade angle and tilt at infinite position by using the hydraulic power with feather touch joystick control system. The invention facilitates position of the blade angle and tilt at infinite position by using the hydraulic power with feather touch joystick control system. By application of this new system the equipment's operation becomes more versatile, highly productive and reduces the operator fatigue, which increases the overall efficiency of the product. To be published with Figure 1 and 2

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :11/04/2024

(21) Application No.202441029388 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND A METHOD FOR INTERACTIVE SUMMARIZATION AND SIMPLIFICATION OF ENGLISH LEGAL CONTRACTS

(51) International classification :G06N3/08, G06F16/35, G06Q50/18, G06F40/30

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A SYSTEM AND A METHOD FOR INTERACTIVE SUMMARIZATION AND SIMPLIFICATION OF ENGLISH LEGAL CONTRACTS The present disclosure discloses a system and a method for interactive summarization and simplification of English legal contracts. The system(100) comprises a desktop application(102) installed at a local system(104) of an operating user; a user interface module(106) to receive English legal contracts in various formats; a natural language processing (NLP) module(108) to extract key clauses, and identify legally significant terms and contextual interdependencies from contract, and generate semantic maps to visually represent the relationships; a contract summarization module(110) to generate multi-level simplified summaries; a legal compliance module(112) to validate that the simplified summaries adhere to jurisdiction-specific legal standards and industry regulations, suggest modifications or highlight clauses; a feedback and revision module(114) to provide feedback on the generated summaries; an artificial intelligence (AI) model training module(116) to implement hybrid supervised and unsupervised learning techniques to continuously improve summarization accuracy and compliance validation, integrate reinforcement learning.

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/04/2024

(21) Application No.202441029855 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A STRESS TRANSFER LAYER FOR A HIGH ELECTRON MOBILITY TRANSISTOR

(51) International classification :H01L21/338, H01L29/20, H01L29/778

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to Gallium Nitride (GaN) High Electron Mobility Transistor (HEMT) (100) i.e. a semiconductor device (100) which includes a buffer layer (104) formed on the substrate (120). An unintentionally doped (UID) Gallium Nitride (GaN) channel layer (102) is positioned on the buffer layer (104). A barrier layer (106) is formed on the UID channel layer (102) to enable formation of two-dimensional electron gas (2DEG) at interface between UID GaN channel layer (102) and barrier layer (106). A stress transfer layer (116) having tunable intrinsic compressive mechanical stress is deposited on barrier layer (106) to enhance device performance and reliability. Further, the intrinsic stress in the stress transfer layer (116) is tailored to enhance performance in terms of higher threshold voltage and breakdown voltage, and reliability in terms of reduced dynamic RON under DC and switching stress and stable threshold voltage under ON and OFF state gate stress.

No. of Pages : 47 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/04/2024

(21) Application No.202441030500 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD, COMPOSITIONS, AND DEVICE FOR COMBINED AND DIFFERENTIAL DETECTION OF HUMAN PAPILOMA VIRUS (HPV) INFECTION AND CERVICAL CANCER OR OTHER HPV INDUCED CANCERS

(51) International classification	:C07K16/08, A61K39/42, A61P31/20, C12N15/13, G01N33/569, G01N33/577
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT METHOD, COMPOSITIONS, AND DEVICE FOR COMBINED AND DIFFERENTIAL DETECTION OF HUMAN PAPILOMA VIRUS (HPV) INFECTION AND CERVICAL CANCER OR OTHER HPV INDUCED CANCERS The present invention relates to a lateral flow assay that detects and differentiates between HPV infection and cervical cancer or other HPV induced cancers. Provided herein is a combined point of care diagnostic device comprising test markers associated with HPV infection and markers for cervical and other HPV induced cancers, to effectively assess in the rapid differentiation of viral infections and cervical cancer and/or HPV induced cancers. Here the HPV viral infection marker is L1 and the carcinogenesis markers are E6 and E7 oncoproteins of the virus. The device can distinguish between HPV infected non-cancerous and HPV induced cancer patients.

No. of Pages : 66 No. of Claims : 31

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/04/2024

(21) Application No.202441030609 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVICE, SYSTEM AND METHOD FOR COLLECTING AND PROCESSING DATA FROM FIELD DEVICES USING DIFFERENT COMMUNICATION PROTOCOLS

(51) International classification	:H04W0012106000, G06Q0040020000, H04L0069080000, G06F0021640000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Embodiments of the present disclosure relate to a device (20A, 20B, …, 20N), system (10) and method. The system (10) comprising one or more field devices (21, 22, 23, 24, 25, 26), a cloud-based computing system (12), and a plurality of Internet of Things (IoT) devices (20A, 20B, …, 20N). The cloud-based computing system (12) includes a cloud-based database (11) adapted to store a plurality of communication protocol stacks corresponding to the one or more field devices (21, 22, 23, 24, 25, 26). The IoT devices (20A, 20B, …, 20N) are communicatively coupled with the cloud-based computing system (12) via a first network interface and are also communicatively coupled with respective field devices via a second network interface. Each IoT device (20A, 20B, …, 20N) comprises one or more processors and a memory having computer-readable instructions stored thereon that, when executed by the one or more processors, cause the IoT device (20A, 20B, …, 20N) to: receive respective identification information from the field devices during a handshake process, active probing, or protocol discovery; retrieve a respective communication protocol stack from a local database based on the identification information; and receive and process data from the field devices using the respective communication protocol stack, thereby obtaining processed data. The technical solution provided herein enables automatic configuration and interoperability of IoT devices with diverse field devices by leveraging protocol identification and stack retrieval mechanisms, reducing manual intervention and ensuring seamless data acquisition in heterogeneous industrial environments. Fig. 1

No. of Pages : 30 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/04/2024

(21) Application No.202441030989 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METAL SULFIDES-BASED DEVICE FOR ON-SITE DETECTION OF HEAVY METAL IONS IN WATER AND METHOD THEREFOR

(51) International classification :C02F0101200000, G01N0021640000, G01N0033180000, G02B0021360000, G01N0021770000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
METAL SULFIDES-BASED DEVICE FOR ON-SITE DETECTION OF HEAVY METAL IONS IN WATER AND METHOD THEREFOR The present invention relates to a portable, low-cost sensing device and method for on-site detection of heavy metal ions in aqueous environments, ensuring water safety through an easy-to-handle hydrophobic platform functionalized with metal sulfide nanostructures. The system enables rapid analysis with exceptionally low detection limits while requiring minimal sample volumes, making it particularly suitable for remote sensing applications. The device incorporates nanostructured M?Sy (M=Bi, x=2, y=3) and (M=Sn, x=1, y=2) sensing materials synthesized through a simplified one-step, low-temperature in-situ solvothermal process using single-source precursors, with specific surface properties that enhances sensitivity. This innovation provides a practical, cost-effective solution for environmental monitoring, industrial effluent testing, and regulatory compliance, addressing the urgent need for decentralized heavy metal detection technologies. Figure of abstract: FIG. 1.

No. of Pages : 36 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :19/04/2024

(21) Application No.202441031348 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NUT BASED HIGH PROTEIN SNACK

(51) International classification :A23L25/00, A23L25/10, A23L27/10

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Complete Specification annexed herewith.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :19/04/2024

(21) Application No.202441031467 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A RECOMBINANT SIGMA FACTOR, RECOMBINANT BACTERIUM, METHODS OF PREPARATION AND APPLICATIONS THEREOF

(51) International classification :G16B35/00, C12N15/63, A61K35/744, A61K39/108

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number:NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A RECOMBINANT SIGMA FACTOR, RECOMBINANT BACTERIUM, METHODS OF PREPARATION AND APPLICATIONS THEREOF The present disclosure relates to a recombinant sigma factor having at least one exogenous 5 modification. The exogenous modification is present in the form of an exogenous linker between sigma 2 and sigma 4 of the sigma factor and/or L3 loop in the sigma 2 domain of the sigma factor. The disclosure also discloses a recombinant bacteria comprising the recombinant sigma factor. Also provided are uses of the recombinant bacteria in biochemical pathways for producing phytochemicals or flavonoids. The advantage of the present disclosure is that it provides an 10 environment friendly and economical production strategy of phytochemicals.

No. of Pages : 117 No. of Claims : 63

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/04/2024
(21) Application No.202441031550 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A System for Robot-Assisted Incremental Manufacturing Processes, and Methods Thereof

(51) International classification :B25J15/00, B25J13/00, B25J9/00, B25J9/16
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A System for Robot-Assisted Incremental Manufacturing Processes, and Methods Thereof A system and method are disclosed for robot assisted incremental Manufacturing Processes, utilizing the full potential of two robots by attaching a fixture to one robot and a single-point tool to the other. Two serial robots are used in handclasp arrangement, explicitly one robot attached with a forming tool and a second robot with the blank holding fixture.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/04/2024
(21) Application No.202441031584 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GREEN METHOD OF SYNTHESIS OF CARBON DOTS BASED NANO FORMULATION FROM GARDEN TEA WASTE AND NANO FORMULATION THEREOF

(51) International classification :C01B32/15, B82Y30/00, B82Y40/00, C09K11/65
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
GREEN METHOD OF SYNTHESIS OF CARBON DOTS BASED NANO FORMULATION FROM GARDEN TEA WASTE AND NANO FORMULATION THEREOF A green method of synthesis of carbon dots (CDs) from garden tea waste (GTW) and developing a stable nano emulsion using the synthesized carbon dots is disclosed in the present invention. The carbon dots are synthesized by combining pyrolysis and ultra-sonication from garden tea waste without the use of chemical precursors or reducing agents while simultaneously increasing the recovery and enhancing the biocompatibility and optical properties of carbon dots. The synthesized carbon dots are formulated into a nano emulsion for prolonged stability and enhanced wettability, which in turn is used as a biostimulant for tea plantation to achieve environmental and economical sustainability.

No. of Pages : 30 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :21/04/2024

(21) Application No.202441031604 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Biocoating Formulation of Epoxidized Waste Cooking Oil for Food Packaging and Method Thereof

(51) International classification :C23C4/01, C07F7/20, C08G63/00, C09D133/04, C09D167/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Biocoating Formulation of Epoxidized Waste Cooking Oil for Food Packaging and Method Thereof ABSTRACT The invention relates to a biocoating formulation of epoxidized waste cooking oil for food packaging. The formulation comprises a bioresin, a diluent, and either a silane coupling agent for thermal curing or a photoinitiator for UV curing. The bioresin is prepared by acrylating epoxidized cooking oil with acrylic acid and triphenyl phosphate at 90°C for five hours. The coating composition uses a low-boiling alcohol or water-dispersible emulsion as solvent, providing hydrophobicity and oil and grease resistance to paper substrates. The biocoated paper exhibits moisture and gas barrier properties, is biodegradable, compostable, non-toxic, cost-effective, and food-safe, complying with migration, cytotoxicity, and biodegradability standards. (Figure 1 for abstract).

No. of Pages : 27 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :23/04/2024

(21) Application No.202441032201 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS FOR THE PREPARATION OF A COCKTAIL OF PEPTIDES AND AMINO ACIDS

(51) International classification :A23J3/30, A23J3/34, A23J1/04, A23K1/10

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A PROCESS FOR THE PREPARATION OF A COCKTAIL OF PEPTIDES AND AMINO ACIDS The present disclosure relates to a sustainable process for the preparation of a cocktail of peptides and amino acids from different protein sources through controlled hydrolysis. The process utilizes proteases and biosurfactants in optimized conditions of temperature, pH, and time to selectively hydrolyze the proteins, enhancing the production of bioactive peptides. A carbon-based organic acid is introduced to augment synthesis while maintaining protein integrity. The process follows a circular economy approach, recycling undigested material to ensure minimal waste and efficient resource utilization. The cocktail of peptides and amino acids offers significant applications in the agriculture, feed, food, pharmaceutical, and nutraceutical industries.

No. of Pages : 51 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/04/2024

(21) Application No.202441032990 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ELECTROCATALYTIC CONVERSION OF SULFURYL FLUORIDE INTO USEFUL CHEMICALS

(51) International classification :B01D53/48, B01J23/40, B01J23/63, B01J23/652, B01J23/66, B01J23/70, C01B7/19

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure provides an electrocatalytic reaction system (100) for conversion of sulfuryl fluoride (SO2F2) into useful chemicals in the presence of one or both of CH4 and CO2, which includes an electrocatalytic reactor (101), wherein the electrocatalytic reactor (101) is equipped with asymmetric electrodes, wherein the cathode is a Copper-Manganese (Cu-Mn) alloy, and the anode is metallic Copper (Cu), wherein these electrodes act as electrocatalyst, and acidified deionised water (H3O+) acts as electrolyte, and a catalyst initiator mixture is included in the acidified deionised water (H3O+). The electrocatalytic conversion occurs under an applied DC power of 25W (i.e., 5V and 5A), wherein the applied power initiates C-C coupling reactions on the cathode surface leading to ethylene formation from CO2 and CH4 and further reaction of ethylene with SO2F2 to form Ethene sulphonyl Fluoride (ESF), or in the presence of a chloride medium to Ethene sulphonyl chloride (ESC).

No. of Pages : 33 No. of Claims : 18

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/06/2024

(21) Application No.202441049899 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A COMPOSITE MATERIAL AND NANOCOATING FOR AIR FILTRATION APPLICATIONS

(51) International classification :C09D0005140000, B82Y0030000000, A01N0059160000, C08K0003080000, A61K0009000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed is a graphene-silver nanoparticles (GAgNPs) composition that includes trisodium citrate ranging from 0.08% to 0.17%, silver nitrate ranging from 0.01% to 0.038%, graphene ranging from 12% to 20%, and water ranging from 80 to 88%. The trisodium citrate acts as a stabilizing agent, while the silver nitrate serves as a precursor for silver nanoparticle formation. The present disclosure also relates to a method for synthesizing GAgNPs composition, involving dissolving trisodium citrate in water, mixing it with a graphene solution, and adding a sonicated silver nitrate solution dropwise to form a colloidal suspension. The resulting mixture is stirred for 1-2 hours until a color change indicates nanoparticle formation. This composition is suitable for applications requiring enhanced electrical conductivity and stable silver nanoparticles. Figure 1 will be the reference.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/07/2024
(21) Application No.202441055451 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Method of Vacuum Distillation with Ceramic and Polymeric Raschig Rings

(51) International classification :B01D 3/10, B01J 19/30, B01J 19/32, C01B 15/013, C04B 41/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: Method of Vacuum Distillation with Ceramic and Polymeric Raschig Rings. The present invention relates to an optimized vacuum distillation system for the purification of hydrogen peroxide using 3D-printed Raschig rings to enhance separation efficiency. The method comprises using a round bottomed flask (102) heated by a heating mantle (103) to initiate evaporation. Vapors rise through a packed distillation column (105) containing 3D-printed Raschig rings (106), enhancing separation efficiency. A three-way adaptor (107) regulates the reflux ratio, directing vapor to a Graham condenser (109), where it is cooled and condensed. The purified distillate is collected in a receiving flask (113), while a vacuum pump system (117) maintains low pressure to prevent thermal decomposition. A controlled reflux process (0.5-1 ratio) enhances product purity, and temperature (104) and pressure (115) monitoring ensures optimal distillation conditions. Multiple distillation cycles further concentrate hydrogen peroxide. The process achieves high-purity hydrogen peroxide with minimal losses, reduced operating time, and lower risk of explosive vapor formation, making it an efficient and scalable purification method.

No. of Pages : 23 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/07/2024

(21) Application No.202441058025 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SEMI-SUBMERSIBLE FLOATING STRUCTURE WITH A TUNED MASS DAMPER

(51) International classification	:B63B0035440000, B63B0001100000, E04H0009020000, B63B0039030000, B63B0039060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT “A SEMI-SUBMERSIBLE FLOATING STRUCTURE WITH A DAMPER SYSTEM” A semi-submersible floating structure (100) is disclosed. The floating structure (100) 5 comprises a plurality of mooring lines (102) for securing the floating structure (100) to a fixed point. A plurality of pontoons (104) is provided to keep the floating structure (100) afloat. A plurality of columns (106) is connected to the pontoons (104). At least one deck (108) is connected to the columns (106) and supports equipment and personnel. A damper system (110) is configured to oscillate in 10 response to mechanical vibrations and motions. The damper system (110) is adapted to mitigate vibrations through counteracting motion and energy dissipation. The damper system (110) stabilizes the floating structure (100) with respect to the fixed point. 15 [Figure 1]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/09/2024
(21) Application No.202441071126 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Method for reclamation of sodic water using gypsum and lime beds treatment for paddy cultivation

(51) International classification :A01G0018200000, C02F0001520000, A61K0033060000, C04B0028140000, E04C0002040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Title: A method for reclamation of sodic water using gypsum and lime beds treatment for paddy cultivation The present invention is a method for reclamation of sodic water using gypsum and lime beds treatment for paddy cultivation wherein gypsum and lime bed structure (115 and 120) consist of a concrete chamber (110) divided into two equal halves to accommodate both the gypsum (115) and lime beds (120) of 10 cm thickness by a 10cm thick wall. 4 mild steel rods (125) of 10 mm diameter are placed along the width of the bed. 2mm wire mesh is placed over the rods to hold the gypsum and lime fragments. A waterfall box, 1.3 m × 1.3 m ×1.5 m (135) is attached and further an outlet (140). The bed is filled with gypsum and lime fragments (130) upto 60 cm of its depth. The use of gypsum bed and lime bed significantly reduces the quantity of gypsum and improves the soil health for paddy cultivation.

No. of Pages : 18 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :09/10/2024

(21) Application No.202441076762 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MOTOR WITH A THREE-LAYERED COOLING JACKET INSIDE THE CASING AND METHOD FOR THERMAL MANAGEMENT

(51) International classification	:F01P0003020000, H02K0005200000, F24F0013200000, F01P0003220000, H01L0023000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

ABSTRACT MOTOR WITH A THREE-LAYERED COOLING JACKET INSIDE THE CASING AND METHOD FOR THERMAL MANAGEMENT The present disclosure provides an oil-cooled motor (100) with a three-layered cooling jacket and a method for thermal management. The motor (100) comprises a motor casing (102) housing a stator (104), rotor (106), windings (108), and shaft (110). The cooling system (112) includes an inner oil jacket (114) for direct heat absorption, an intermediate water jacket (116) for heat transfer, and an outermost oil jacket (118) thermally coupled to a pin-fin heat exchanger (120) and aluminum fins (120a) of the Motor Control Unit/Power Electronics (MCU/PE) (122). An oil pump (124) circulates oil through the system, while a coolant pump (126) directs coolant to a water-to-air heat exchanger (128) aided by a cross-flow tube fin heat exchanger (152) and an external ambient air suction fan (154). A thermal management control unit dynamically adjusts cooling parameters. The system enhances heat dissipation, prevents overheating, and ensures optimal motor performance across varying operational conditions.

No. of Pages : 30 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :14/10/2024
(21) Application No.202441077911 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR ENHANCED UNMANNED AERIAL VEHICLES (UAVs) DELIVERY

(51) International classification :B64C0039020000, G05D0001000000, B64U0101600000, G06Q0010083000, A47G0029140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to the field of aerial delivery systems and image processing. More particularly, the present disclosure relates to an Unmanned Aerial Vehicles (UAVs) delivery system (102) using image-based authentication, and method (400) thereof. The proposed UAVs delivery system (102) ensures that the package reaches a recipient. The UAVs delivery system (102) incorporates an onboard microcomputer processes which receives an input data from an image capturing unit associated with the UAV. Further, using an image-based authentication technique, the recipient's face can be identified by comparing to a predefined input. The significant match of the recipient's face, triggers the package delivery/drop mechanism which can be connected to the processor of the UAV. Thus, by implementing the UAVs delivery system (102) the efficiency of the autonomous delivery of goods can be improved significantly.

No. of Pages : 40 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/10/2024

(21) Application No.202441079413 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SOFT PNEUMATIC ACTUATOR, GRIPPER ASSEMBLY, AND METHOD FOR MANUFACTURING SOFT PNEUMATIC ACTUATOR

(51) International classification	:C22C0038020000, A61H0033000000, C22C0038040000, H02K0029030000, C22C0038280000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

SOFT PNEUMATIC ACTUATOR, GRIPPER ASSEMBLY, AND METHOD FOR MANUFACTURING SOFT PNEUMATIC ACTUATOR ABSTRACT The present disclosure provides soft pneumatic actuator (SPA) comprising: soft finger (SF) moulded as unibody part, pneumatic connector configured to pneumatically couple SF with pneumatic source; barbed fitting capable of being partially arranged into second end of SF and partially arranged into pneumatic connector, and module hub. The SF comprising: hollow bellowed structure capable of being deformed under pneumatic pressure, hollow bellowed structure being located between first end and second end of SF, thickness of second end being greater than thickness of first end; and a strain-limiting layer integrated with hollow bellowed structure at the first end of SF, wherein the strain-limiting layer is configured to enable a deformation of the hollow bellowed structure in a controlled manner. The module hub adapted to: securely hold SF, pneumatic connector, and barbed fitting together, during an operation of SPA; and integrate the SPA into pneumatic gripper assembly. FIG. 1 for the Abstract

No. of Pages : 58 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/10/2024
(21) Application No.202441083392 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A MULTIMODAL INFORMATION SEARCH SYSTEM FOR A TEXT DOCUMENT AND A METHOD FOR THE SAME

(51) International classification :G06F16/908, G06F17/30, G06F40/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a multimodal information search system for a text document and a method for the same. The proposed system mainly includes a multimodal input module, a preprocessing module, an information search module, and a result integration module. The proposed multimodal information search system within a single text document is integrated with advanced AI capabilities, deep learning techniques, and dedicated hardware components, to handle both text and image based search queries within a document. The working of the system mainly includes, uploading document, converting document in vectors, query submission, query processing, execution of query search, and compilation of results, and displaying the results. The proposed system provides accurate, relevant, and comprehensive search results, and acts as a powerful tool for efficient and effective information retrieval from a document.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/11/2024
(21) Application No.202441091394 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ARTIFICIAL INTELLIGENCE (AI) ENABLED SYSTEM AND METHOD FOR PINEAPPLE DISEASE DETECTION AND LOCALIZATION

(51) International classification :G06N0020000000, G16H0050200000, G06V0010820000, G06Q0050020000, G01N0033680000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT AN ARTIFICIAL INTELLIGENCE (AI) ENABLED SYSTEM AND METHOD FOR PINEAPPLE DISEASE DETECTION AND LOCALIZATION The present invention relates to an artificial intelligence (AI) enabled pineapple disease detection and localization. proposes an advanced machine learning-based system for the early detection, classification, and localization of diseases in pineapple crops, addressing the limitations of traditional inspection methods. The system utilizes a mobile application to provide farmers real-time disease insights, enabling prompt action against specific diseases, reducing spread, and enhancing crop yield. To be published with Figures 1 and 10

No. of Pages : 24 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/11/2024

(21) Application No.202441092755 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FORMULATING A PALM SPREAD FROM GERMINATED SEED EMBRYO OF PALMYRA (BORASSUS FLABELLIFER L.)

(51) International classification :A23L21/10, A23L21/12, A23N4/18

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

No. of Pages : 22 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/12/2024
(21) Application No.202441098903 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD AND SYSTEM FOR GRAIN SPROUTING

(51) International classification :A01C0001020000, A61P0035040000, A21D0013020000, A01G0031020000, G03C0001035000
(86) International Application No :NA
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

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(57) Abstract :
ABSTRACT A METHOD AND SYSTEM FOR GRAIN SPROUTING The present disclosure relates to a method (600) and system (100) for grain sprouting, enabling personalized and automated control of the sprouting process. The method (600) involves receiving user inputs such as grain type, quantity, and desired sprouting duration. A sprout recipe is generated based on the user's preferences, which directs the grain dispenser to discharge the appropriate grains into sprouting containers. Water and steam are dispensed into the sprouting containers in real-time, adjusting to the specific conditions of each grain type. The system (100) sequentially controls rinsing, soaking, and sprouting, utilizing real-time sensors to monitor environmental conditions such as temperature and humidity. The personalized approach ensures that each user's grain sprouting needs are met with high efficiency and precision, resulting in the optimal growth of grains for culinary or nutritional purposes. To be published with FIG. 3

No. of Pages : 54 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/01/2025
(21) Application No.202541002360 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN INTELLIGENT AND MULTI-FUCTIONAL STICK FOR BLIND PEOPLE USING IoT

(51) International classification :A61H0003060000, G09B0021000000, A61F0009080000, G08B0021020000, B41M0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The most pervasive sense in the human body, vision is essential to all aspects and phases of life. Even though we usually take our vision for granted, it is necessary for working, learning, walking, reading, and taking part in school activities. An eye condition that affects the visual system and its functions can lead to vision impairment. If they live long enough, everyone will eventually develop at least one eye condition that needs to be properly treated. But have we ever given any thought to the blind people who are either born blind or who suffer a visual impairment from an accident? A person's entire life is negatively impacted by vision impairment. People who are blind or visually impared have long used traditional sticks to identify obstacles in their path. This stick is difficult to use because it has a lot of ineffective features. To make the lives of blind people a little bit simpler, we have created an intelligent blind stick. This paper describes a navigation and security system that shares the user’s location with a guardian via GPS and mounts an cam module on an ultrasonic blind stick. Those who are blind or visually impared can navigate more easily with the help of the smart blind stick .It makes the use of three ultrasonic sensors :one attached to the front of the stick and two on either side of the device. The voice module uses Bluetooth to play a recorded message over an earpiece to notify users when it detects a blockage. The user receives a voice alert when a body of water is detected using water sensor. Additionally, it assist’s the user in crossing roads by using color sensors to detect traffic signals.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/01/2025

(21) Application No.202541002371 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AYUSHMAN AUSHADH-A NOVEL AND INNOVATIVE ANTI-DIABETIC HERBAL FORMULATION

(51) International classification	:A61K0036185000, A61K0036482000, A61P0003100000, A61K0036270000, A61K0036470000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a novel herbal and nutraceutical composition and method for regulating glucose metabolism, thereby reducing the sugar spikes in individuals with impaired glucose regulation or hyperglycemia. This novel synergistic herbal combination comprises Gymnema sylvestre, Syzygium cumini, Brassica oleracea var.gongylodes, Abelmoschus esculentus, Phyllanthus emblica, Hibiscus sabdariffa, Senna auriculata, Tinospora cordifolia, Cardiospermum halicacabum and Boerhavia dif.fusa., which greatly supports in managing the side effects caused by diabetes, thereby detoxifying the organ in a natural way. This formulation can be administered orally in the form of capsule or tablet. We named our invented formulation as "A YUSHMAN AUSHADH" which means "Live-Long life medicine" as it rejuvenates the body by greatly decreasing the side effects in diabetic individuals and also acts as a "Life Changer" for pre-diabetic individuals by reversing the insulin resistance.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/01/2025

(21) Application No.202541002372 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : JEEVAN SAMYUKTHY-AN EFFECTIVE HERBAL EXPECTORANT FOR COLD AND COUGH

(51) International classification :A61K0036190000, A61K0036530000, A61K0036185000, A61K0036280000, A61K0031522000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
This invention discloses a preparation method of an Indian traditional medicine ·for treating cold and cough. The prominent significance of this invention is that non-sedative, non-alcoholic formulation contributes to designing the innovative oral liquid formulation without sugar base, where even diabetic patients can get administered. This. can also be formulated as capsules and tablets. This effective herbal formulation comprises Aerva lanata, Ocimum sanctum, Solanum trilobatum, Leucas cephalotes, Justicia adhatoda, Bourreria cassinifolia.,. which work as an expectorant thatlubricates the bronchial airway. This herbal formulation is prepared by collecting the herbs, sun dried, pulverized and sieved into a fine powder which is then boiled with water, cooled and filtered. This invention mainly focused on formulating an effective herbal formulation suitable for all ages, which helps in managing cold and cough. It acts as a "WATER SCRAPER" which greatly cleanses the whole respiratory tract. So, we named our invented formulation as "JEEV AN SAMYUKTHY" as it serves Q) as a one stop solution for every individual irrespective of age.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :10/01/2025
(21) Application No.202541002374 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SIRANJEEVI THEERTH - AN INNOVATIVE ANTI-HYPERLIPIDEMIC HERBAL VITALITY DRINK

(51) International classification :A61K0036185000, A61K0036484000, A61P0003060000, A61K0036470000, A61K0036280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invented formulation relates to the herbal composition for the management of LDL and VLDL cholesterol levels. This invention is a novel synergistic herbal combination composed of Tribulus terrestris, Borreria hispida, Glycyrrhiza glabra, Phyllanthus emblica, Coriandrum sativum., known for their anti-hyperlipidemic properties, including the improvisation of blood purification and rejuvenation thereby speeding up the process of preventing heart blockages. As a result, a healthier cardiovascular system can be achieyed. This formulation is prepared by collecting the herbs, drying them up followed by pulverization and sieving process which is made to boil them with water, cool them down and filter. We named our in\fented formulation as "SIRANJEEVI THEERTH" as it acts as a "WATER SURGEON" and "LIFESAVER" for suffering individuals. This herbal formulation can be administered orally in liquid form.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/01/2025
(21) Application No.202541003683 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : NOSTRIL RETAINER DEVICE

(51) International classification :A61B0017800000, A61M0025020000, H02J0007000000, G02F0001133700, A61N0005040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT “NOSTRIL RETAINER DEVICE” The embodiments herein describe a nostril retainer device (1) comprising a nostril stent assembly (3) and a wing assembly (2), detachably attached to the nostril stent assembly. The wing assembly includes a body having a set of holes positioned at a centre of the wing assembly to hold the nostril stent assembly and an attachment member to secure the nostril retainer device into a nose of an individual to assist the individual to perform a nasal activity by the individual. The nostril stent assembly and the wing assembly are made of a biocompatible material comprising at least one of a medical-grade silicone, a Liquid Silicone Rubber (LSR), a rubber, a thermoplastic urethane, elastomers and thermoplastic elastomer. FIG. 1

No. of Pages : 41 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :22/01/2025
(21) Application No.202541005326 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A POWER SYSTEM STABILIZER (PSS) SYSTEM AND A METHOD THEREOF

(51) International classification :H02J3/00, H02J3/24, H02J3/38, H02M7/48, G06N3/006, G06N3/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A POWER SYSTEM STABILIZER (PSS) SYSTEM AND A METHOD THEREOF The present invention relates to a power system stabilizer (PSS) system (100) and method (200) for an inverter-based microgrid. The system includes a hybrid energy storage unit (102), an inverter (104), a voltage and current measurement module (106), a transformation module (108), a droop control module (110), a lead compensator module (112), and a processing module (114). The processing module (114) implements a parameter optimization process, based on honey bee foraging behavior, to dynamically tune parameters of the lead compensator module (112). The system enhances stability and dynamic performance by improving the damping of low-frequency oscillations and enhancing power sharing accuracy.

No. of Pages : 37 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/01/2025

(21) Application No.202541005327 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A FINITE CONTROL SET-BASED MODEL PREDICTIVE CONTROLLER FOR LOAD POWER-SHARING APPLICATIONS IN INVERTER-FED MICROGRIDS

(51) International classification :G05B13/04, H02J3/38, H02M7/42, H02J13/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT A FINITE CONTROL SET-BASED MODEL PREDICTIVE CONTROLLER FOR LOAD POWER-SHARING APPLICATIONS IN INVERTER-FED MICROGRIDS A finite control set-based model predictive control (FCS-MPC) system (100) for dynamic load power-sharing in inverter-fed microgrids is disclosed. The system (100) comprises distributed inverters (101) coupled with local measurement units (102) to acquire real-time electrical parameters, which are processed by a central processing unit (105) and a digital signal processor (DSP) (106) executing an FCS-MPC algorithm. Optimal inverter switching states are determined using a cost function (114) and implemented via pulse-width modulation (PWM) driver circuits (108). A real-time feedback loop (109) enables continuous correction based on deviations between predicted and actual parameters. A communication module (110) ensures synchronized operation among inverters using wired or wireless interfaces. A graphical user interface (GUI) (111) allows remote monitoring and control, while a machine learning module within a data storage unit (112) adaptively optimizes control performance. The system (100) ensures proportional and efficient power-sharing under varying load and fault conditions, enhancing stability and responsiveness in microgrid environments.

No. of Pages : 46 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/01/2025
(21) Application No.202541006816 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : REMOVING THE OIL SPILL IN SEAWATER BY USING A MODIFIED TANKER SHIP WITH DECANTATION PROCESS

(51) International classification	:C02F0103080000, C02F0001440000, E02B0015040000, B63B0025080000, B63H0021380000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
"Removing the oil spill in seawater by using a modified tanker ship with decantation process. The tanker portion of a tanker ship is being divided into four portions parallel to the keel. From the bottom to the top is for storing seawater, for storing oil, for storing (seawater + oil) and providing the mouth and the connecting pipelines. Bulk of steel plates being laid over the keel to immerse the ship more inside of the seawater and it give advantage to provide a pocket in front top of the ship. Two separate pipelines being positioned vertically, one end of a pipeline at the bottom and also one end of the other pipeline at the middle height of the (seawater + oil) tank. The seawater with oil spill being allowed to flow inside of the streamline. Alternately (or) simultaneously the caps of the pipes are being opened and the seawater and oil being segregated and stored in the water tank and in the oil tank as respectively. The seawater being pumped back to the sea and the oil sent for further process and usage.

No. of Pages : 27 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/01/2025

(21) Application No.202541006820 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD OF REMOVING THE OIL SPILL IN SEAWATER AT COASTAL AREA BY DECANTATION PROCESS

(51) International classification :C02F0103080000, E02B0015040000, C02F0009000000, B63B0025080000, F16L0001260000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT Method of removing the oil spill in seawater at coastal area by decantation process. The seawater with oil spill being drawn outward from the sea and connected with the mouth of the device. The mouth is being connected with the tanks (seawater + oil) through inverted "V" shape pipeline which are being located inside of the slope dug ground. Each two pipelines being located inside of the tanks, one end of one pipeline being located at the bottom of this tank and the other end being connected with the water tank which is located lower than the (seawater+ oil) tank. One end of the other pipeline being located at the middle of the (seawater+ oil) tank and the other end being connected with the oil tank which is located lower than the (seawater + oil) tank. Alternately (or) simultaneously the valves are being opened and the segregated seawater and oil being stored in the water tank and the oil tank as respectively. The seawater being pumped back to the sea and the oil sent for further process and reuse.

No. of Pages : 15 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/02/2025

(21) Application No.202541010791 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : GLUTAMINE AND PROLINE SUPPLEMENT COMPOSITION

(51) International classification	:A61K0031501000, C12N0005073000, A61K0031401000, C07D0207160000, A61K0031498500
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Enclosed as above

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/02/2025

(21) Application No.202541010792 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : GUT MICROBIOME COMPOSITION AND METHOD THEREOF

(51) International classification	:A61K0035745000, A61K0035747000, A23L0033135000, C12R0001010000, C12R0001225000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Enclosed as above

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :19/02/2025

(21) Application No.202541014201 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : GERONTOLOGICAL CARE SOLUTION: AN IOT-BASED SECURE HEALTH CARE SYSTEM USING BODY SENSOR NETWORK SERVER

(51) International classification	:H04W0084180000, H04L0009080000, H04L0009320000, H04W0004800000, H04L0009400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The continuous evolution of communication technologies in contemporary smart devices heralds a new era in the development of applications for Internet of Things (IoT)-based networks. Notably, the contactless nature and efficient data retrieval capabilities of mobile smart devices, such as wearable technology and specialized bio-sensors, have led to the proposal of various innovative healthcare systems utilizing Body Sensor Networks. This invention presents a secure IoT-based healthcare system that functions through the Body Sensor Network architecture. To achieve both system efficiency and robust transmission within public IoT communication networks, we employ strong cryptographic primitives to establish two communication mechanisms that ensure transmission confidentiality and facilitate entity authentication among smart devices, the processing unit, and the backend Body Sensor Network server. Furthermore, we implement the proposed healthcare system using the Raspberry Pi platform to illustrate the practicality and feasibility of the mechanisms introduced.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/03/2025
(21) Application No.202541020223 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN AI-POWERED WEARABLE SAFETY MONITORING SYSTEM FOR HIGH-RISK INDUSTRIES

(51) International classification :A61B0005000000, A61B0005024000, G16H0050200000, G16H0050700000, G08B0021040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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4)Dr. Pallavi Khare, ECED, MEC
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(57) Abstract :
7. ABSTRACT The present invention provides an AI-powered wearable safety monitoring system for high-risk industries, integrating smart wearables (101-104), a central processing unit (201), a dynamic dashboard (301), and a handheld device (401). The wearables monitor health parameters (e.g., heart rate, stress levels) and environmental conditions (e.g., gas leaks, falls). Data is transmitted to the central processing unit (201), which employs adaptive machine learning algorithms to analyze real-time and historical data, generating predictive insights and personalized safety recommendations. The dynamic dashboard (301) visualizes aggregated data, while the handheld device (401) delivers real-time alerts to workers. The system's ergonomic design, redundancy mechanisms, and cloud-based scalability ensure reliability and broad applicability across industries such as construction, mining, and energy. By enabling proactive interventions, the system enhances workplace safety and operational efficiency. The figure associated with the abstract is Fig. 1.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/03/2025
(21) Application No.202541020224 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT CLOTHES DRYING SYSTEM

(51) International classification	:G06F0021860000, G08B0021180000, G08B0021020000, G08B0013060000, H04W0004380000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
7. ABSTRACT The present invention discloses intelligent clothes drying system (100) comprising a motorized drying rack (2) movable between an extended position (4) and a retracted position (6), actuated by power window motors (12) controlled through a motor driver circuit (14). The system incorporates environmental sensors (8) including a temperature sensor (22), humidity sensor (24), rain sensor (26), and wind sensor (28), all interfaced with a microcontroller unit (10) programmed to evaluate weather conditions in real time. Based on sensor data, the system autonomously adjusts the rack's position to optimize drying and protect garments. A communication module (30) with Wi-Fi and Bluetooth enables remote monitoring and manual override. The power supply unit (18), optionally integrated with a solar panel (20), ensures energy-efficient operation. The invention offers automated, weather-responsive drying with minimal user intervention and enhanced garment protection. The figure associated with the abstract is Fig. 1.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/03/2025
(21) Application No.202541020229 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED THREAD PROCESSING MACHINE FOR PRECISION WINDING FOR LARGER DESIGNS

(51) International classification	:D04B0015480000, D03D0029000000, B65G0023440000, B65H0059380000, A61C0017340000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT The present invention relates to an automated thread processing machine designed for precision winding and real-time tension control. The system incorporates a roller drum assembly (102) with 120 evenly spaced pins (104), ensuring uniform thread distribution. A motorized drive system (105), comprising an electric motor (106), gear mechanism (107), and belt drive (108), enables variable-speed rotation. The thread delivery guider (109), featuring a helical bar and bidirectional movement, ensures accurate thread alignment. A sensor-based feedback system (112) continuously monitors and adjusts tension, drum speed, and alignment, preventing slack or misalignment. The data input device (114) allows operators to set winding parameters with real-time feedback. The modular design ensures easy maintenance and scalability. This system significantly improves efficiency, reduces manual labor, and enhances handloom production quality, making it ideal for tie and dye weaving, specialty yarn processing, and bulk handloom manufacturing. The figure associated with abstract is Fig. 1.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/03/2025
(21) Application No.202541021158 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Cultural Heritage Insight and Protection System

(51) International classification :G01D0021020000, A01G0025160000, G01N0027220000, G01N0033240000, G08B0025010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The Smart Heritage Conservation Monitoring System is a wireless IoT-based solution designed to protect heritage structures by continuously monitoring environmental parameters. It integrates multiple sensors to track temperature, humidity, soil moisture, vibration, rain detection, and gas levels, ensuring real-time threat detection. The system provides seamless data visualization through a user-friendly mobile app and dashboard (ThingzMate), enabling efficient monitoring and proactive maintenance.

No. of Pages : 20 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541021605 A

(19) INDIA

(22) Date of filing of Application :11/03/2025

(43) Publication Date : 25/04/2025

(54) Title of the invention : INNOVATIVE IDEA OF BIOMETRIC NET-BASED, ELECTION PROCEESS (BNEP)

(51) International classification	:G07C0013000000, G06Q0050260000, H04L0041000000, G06Q0020320000, C12N0005079000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: All the democratic countries in the world, are facing the exhaustive, expensive, time consuming, unfair, and unsafe election procedures using ballot papers/Electronic Voting Machine (EVM). The common disadvantages in the present election processes are waste of time, huge expenditure, safety of ballot boxes!EVMs till counting and misuse of voting power. The world is being totally bent up on the digital system using network facilities on the global platform for many of our day-to-day activities including huge financial transactions. These online systems are becoming more popular all over the globe, due to their advantages like money and lime saving, better services, vast marketing, avoidance traffic congestion and interaction for science and technology developments on global platform etc., Then, why not voting be done in the similar way? In this era, India has moved a step ahead in conducting elections using EVM with Voter Verifiable Paper Audit Trail (VVPAT). This system also requires some improvements to use as a full proof election procedure. So, here is an innovative idea of "Biometric Net-Based Election Process" (BNEP). To implement this system, every citizen should have a unique biometric identifying Digital Voting Card (DVC) embedded with a chip. A country should provide a separate Wide Area Network (WAN) with requisite broadband. This innovative system will have a Central Election Controlling System (CECS) in the Chief Election Controlling Officer (CECO)'s office of the respective country. Every voting booth during election period should be established with an Online Biometric Electronic Voting Machine (OBEVM) and VVPAT (if required) in its premises. The CECS should be connected to sublevel systems like State Election Controlling System (SECS) in tum with District Election Controlling system (DECS) and Taluka (Rural) Election Controlling System (TECS!RECS). All the individual booths with OBEVM and VVPAT, shall be connected to TECSRECS to DECS to SECS and then finally to the CECS on single network platform. The OBEVM should be provided with biometric identifYing touch screens with the name/s of party/parties/candidate/s earmarked with the respective symbol/s as finalised by CECS. The system will be fully under the control of CECS. Election process will be activated only after logged in by the nominated parties' leaders/ candidates and the CEO with their username and secrete password. Every vote cast in the voting booth will be directly stored in CECS in its Relative Data Base Management System (RDBMS). Closing of election process in individual booth will be authorised to the respective presiding officer (head of the polling booth) depending upon the closing time required after closing the main entry on time for respective booths at local. Soon after the election process at all the booths is over, the system shall be blocked automatically. Again, nominated parties' leader/s candidate/s & the CEO will have to login on the scheduled time to see the result. Then, just on click of a button the autogenerated result will be displayed within no time and will be displayed online. How to adopt and control the entire system of online election process is explained in detail further. Detailed specification, technicality, methodology and schematic diagrams are described as below.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :12/03/2025

(21) Application No.202541022495 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Adaptive and Integrated Multi-Role, Multi-Domain Swarm Drone Platform for Tactical and Strategic Operations

(51) International classification	:G05D0001000000, B64C0039020000, F41H0013000000, B64U0080700000, B64U0101150000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses a heterogeneous, multi-role, multi-domain swarm drone system designed for tactical and strategic operations. The system comprises autonomous UAVs of varied configurations, capable of executing reconnaissance, surveillance, strike, and counter-swarm missions through AI-driven decentralized coordination, adaptive task allocation, and resilient communication frameworks. A multi-mode launch and deployment infrastructure enables autonomous storage, maintenance, and high-speed launch capabilities, ensuring rapid and scalable deployment. The system is specifically designed to operate in GPS-denied and high-threat environments, leveraging networked intelligence and robust communication protocols to sustain mission effectiveness. It is adaptable to fixed, mobile, and maritime platforms, providing highly responsive, resilient, and autonomous operational capabilities in dynamic and contested battlespaces.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541026837 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WIRELESS SENSOR NETWORK FOR REAL-TIME HEALTHCARE MONITORING AND MANAGEMENT

(51) International classification	:A61B0005000000, G16H0040670000, G16H0010600000, G16H0050300000, H04W0084180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :

The invention relates to a.Wireless Sensor Network (WSN) designed for real-time healthcare monitoring and management. The system integrates wearable biosensors, a central processing node, and a cloud-based analytics platform to collect, transmit, and analyze patient health data. The wearable sensors monitor key health parameters such as heart rate, blood pressure, glucose levels, and oxygen saturation, transmitting data via energy-efficient wireless protocols. The central node aggregates data and forwards it to a cloud platform, where advanced AI/ML algorithms identify anomalies and predict potential health risks. The system provides real-time alerts to healthcare providers and caregivers via a user-friendly interface, ensuring timely medical intervention. The invention emphasizes energy efficiency, secure data transmission, and scalable architecture, making it ideal for chronic disease management, post-operative care, and remote patient monitoring in underserved areas.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541026838 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT BASED DRIVER DROWSINESS ALERT SYSTEM FOR SMART TRANSPORTATION SYSTEM

(51) International classification :G08B0021060000, A61B0005000000, A61B0005180000, B60K0028060000, G06V0040160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Driver drowsiness is a major factor in road accidents, especially on long journeys and monotonous routes. This project proposes a real-time driver drowsiness detection system using the Internet of Things (IoT) and smart alert mechanisms. The system monitors the driver's alertness by integrating multiple sensors and employing image processing techniques. Facial recognition technology, using a camera, detects eye closure rates and yawning frequency, while additional sensors like heart rate and motion sensors provide further insights into the driver's physical state. When signs of drowsiness are detected, smart alert mechanisms activate immediate responses, such as audible alarms, seat vibrations, and alerts to nearby devices or emergency contacts through an IoT-enabled network. By combining real-time monitoring with proactive alert systems, this IoT-based solution aims to reduce drowsiness-related accidents, making driving safer on highways and in other high- risk driving conditions. This approach has the potential to enhance road safety significantly, leveraging IoT and smart technology to ensure timely intervention in drowsiness situations.

No. of Pages : 6 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541026927 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INVESTIGATION OF PASSIVE COOLING FOR EV BATTERY PACKS USING NATURAL CONVECTION

(51) International classification :H01M0010613000, H01M0010625000, H05K0007200000, B60H0001000000, H01M0010656300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION: This project presents an analysis of thermal management within EV battery packs using natural convection as the secondary cooling mechanism. The study aims to investigate the temperature distribution, heat dissipation, and overall thermal performance of battery packs under specific operating conditions. A test setup is designed to simulate real-world driving scenarios, incorporating different environmental factors such as ambient temperature and pack configuration. We are planning to monitor temperature profiles and identify areas of concern, such as hotspots. The results show the effectiveness of natural convection in maintaining acceptable temperature ranges for battery packs under moderate loads but highlight the limitations at higher power outputs, where enhanced cooling methods may be required. That is this is an experimental secondary cooling method. The efficient thermal management of electric vehicle (EV) battery packs is crucial for enhancing performance, safety, and lifespan. As the demand for EVs increases, the need for effective thermal solutions becomes more critical. The findings offer valuable insights for the design of battery cooling systems, contributing to the development of more efficient, safe, and durable EV batteries. OBJECTIVES: 1. To design internal airflow chamber through the vehicle body. 2. To determine the appropriate position for placement of the internal airflow chamber inside the vehicle. 3. Identification of optimal material to be used.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025

(21) Application No.202541026931 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMARTFLEX(AN AI IOT ASSISTED HAND GLOVES FOR ELDERLY CITIZENS)

(51) International classification	:G06F0003010000, H04W0004800000, G09B0021000000, H04W0004380000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT OF THE INVENTION: IoT & Al-assisted gloves are an innovative wearable solution designed to assist disabled individuals and elderly particularly those with speech or motor impairments. These smart gloves integrate flex sensors to detect hand movements and gestures, which are then processed by a microcontroller and Al-based recognition system. Using machine learning algorithms, the system translates gestures into speech, text, or commands, enabling real-time communication and interaction with smart devices. Wireless connectivity through Wi-Fi, Bluetooth, or GSM allows users to control IoT- enabled making daily tasks more accessible. The gloves are lightweight, portable, and energyefficient, making them suitable for extended use. Additionally, the Al system continuously adapts to user-specific gestures, improving accuracy over time. These gloves have wide- ranging applications, including assistive communication, medical rehabilitation, and gesture based computing. By enhancing accessibility and independence, IoT & Al-assisted gloves offer a transformative solution for individuals with disabilities and elderly people.

No. of Pages : 4 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541026983 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IONIC THRUSTER

(51) International classification :F03H0001000000, B64G0001400000, H05H0001540000, B64G0001240000, B64G0001420000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed RF Ion Thruster represents a breakthrough in space propulsion technology, offering a highly efficient alternative to traditional chemical propulsion systems.By utilizing RF energy to ionize a neutral propellant, such as Xenon, the system creates a plasma that generates thrust through the acceleration o f ions. The RF coil inside the discharge chamber generates the necessary high- frequency electromagnetic field for ionization, w hile a screen grid extracts and accelerates the ions through an accelerator grid. This process results in a high- velocity ion beam that provides continuous low-thrust propulsion, ideal for deepspace missions where traditional fuel-based propulsion would be inefficient. To ensure the spacecraft remains electrically neutral, a hollow cathode neutralizer emits electrons to counteract the positive charge of the ion beam. This neutralization process eliminates the risk o f spacecraft charging and maintains system stability during operation. The RF Ion Thruster system's low propellant consumption and high specific impulse make it particularly well-suited for long- duration missions, satel I ite station-keeping, and other deep-space applications. The technology promises to advance space exploration by providing a sustainable, efficient, and reliable propulsion solution that reduces the need for frequent refueling or resupply missions, making long-term space missions more feasibleand cost-effective.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027077 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A DISTRIBUTED ADAPTIVE INTRUSION PREVENTION SYSTEM FOR 5G OPEN RADIO ACCESS NETWORKS

(51) International classification :H04L0009400000, G06F0021570000, G06N0020000000, G06F0021550000, G06N0003046400
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
TITLE: A DISTRIBUTED ADAPTIVE INTRUSION PREVENTION SYSTEM FOR 5G OPEN RADIO ACCESS NETWORKS APPLICANT: PES UNIVERSITY ABSTRACT The patent invention discloses a scalable, layered, and closed-loop security system specifically designed for 5G Open Radio Access Networks (ORAN). As the evolution to 5G introduces increased openness and functional disaggregation, ORAN networks face new security vulnerabilities. To address these, the present invention system integrates a Lightweight Filtering Entity (LFE), an inline rule-based Intrusion Prevention System (IPS), with a High-Level Deciding Entity (HLDE) responsible for advanced anomaly detection and dynamic rule generation. By combining real-time signature-based and anomaly-based detection techniques, the HLDE enhances the system's ability to detect and filter malicious traffic based on novel or existing attack signatures. This innovative framework ensures comprehensive network protection with minimal overhead, making it highly adaptable for various network environments while promoting interoperability and reducing vendor dependency in ORAN systems.

No. of Pages : 25 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027099 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Cassava uprooting device

(51) International classification :A01D25/02, A01D11/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention whose title is "Cassava uprooting device" is relates to a device designed to simplify and improve the process of cassava harvesting. Traditional cassava uprooting methods require significant manual labor, often resulting in root breakage and reduced yield quality. This invention addresses these challenges through a novel combination of a pulley and lever mechanism. The device consists of a sturdy support frame, a pulley system mounted on the top beam, and a lever for mechanical advantage. A hook or gripper attached to the pulley securely grips the cassava stem, allowing controlled vertical lifting. The lever reduces the physical effort required while ensuring smooth uprooting, minimizing root damage. An adjustable height feature allows the device to adapt to different plant sizes and soil conditions. The device improves harvesting efficiency, reduces operator fatigue, and enhances root integrity, making it suitable for small and large-scale cassava farming.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027100 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS FOR THE PREPARATION OF PHOTOCATALYST

(51) International classification :B01J0035390000, C02F0001300000, B01J0027240000, C02F0101380000, C02F0001720000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT A PROCESS FOR THE PREPARATION OF PHOTOCATALYST The present disclosure relates to a photocatalyst i.e. δ-Bi2O3-BiVO4/g-C3N4 nanosheets (BBVCN), and a process for its preparation. The environment friendly photocatalyst of the present disclosure is prepared by selective vanadium etching (surface etching-oxidation) technique. The photocatalytic activity of BBVCN is assessed by using tetracycline hydrochloride as a model antibiotic pollutant in wastewater. Under light illumination, the photocatalyst demonstrated an impressive 92% degradation efficiency and 76% mineralization efficiency of tetracycline (TC) within just one hour.

No. of Pages : 44 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027101 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR EVALUATING THE INFLUENCE OF CORPORATE GOVERNANCE ON SUSTAINABLE DEVELOPMENT GOAL (SDG)

(51) International classification :G06Q 10/00, G06Q 10/067, G06F 40/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT A SYSTEM FOR EVALUATING THE INFLUENCE OF CORPORATE GOVERNANCE ON SUSTAINABLE DEVELOPMENT GOAL (SDG) The present disclosure discloses a system for evaluating the influence of corporate governance on sustainable development goals (SDG). The system (100) comprises a data collection module (102) configured to retrieve and preprocess governance-related data and SDG disclosures. A machine learning analytics module (104) analyzes the preprocessed data using machine learning and natural language processing techniques. A benchmarking module (106) compares analyzed governance attributes and SDG metrics against industry benchmarks and generates visual reports. A predictive modeling module (108) forecasts the impact of governance attributes on future SDG disclosures using regression models, neural networks, or decision trees. A decision support module (110) generates governance optimization recommendations and compliance insights via an interactive dashboard with visualization tools, enabling stakeholders to interpret governance performance and its influence on SDG reporting effectively.

No. of Pages : 25 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027102 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Reinforcement Learning-Based Intrusion Detection System for Adaptive Cyber Threat Mitigation

(51) International classification :G06F 21/55, G06N 20/00, G06N 3/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
Reinforcement Learning-Based Intrusion Detection System for Adaptive Cyber Threat Mitigation Abstract: Safeguarding networks from cyberattacks depends mostly on intrusion detection systems (IDS). Recent developments in Reinforcement Learning (RL) have shown promise in improving threat detection and response systems, hence strengthening IDS performance. This work intends to research and evaluate several RL algorithms in the framework of IDS, thereby determining the most efficient methods for real-time threat reduction. The effectiveness, accuracy, and flexibility of important RL methods—including Q-learning, Deep Q Networks (DQN), and Proximal Policy Optimization (PPO)—are assessed in relation to cyberattack detection and prevention. Experimental data point to the advantages and drawbacks of every method, therefore guiding their fit for IDS uses. The results of this work help to create an optimal RL-based IDS architecture, therefore enabling actual implementation in cybersecurity solutions and patent filing. Conventional Intrusion Detection Systems (IDS) mostly rely on signature-based or anomaly-based approaches, which sometimes find it difficult to identify fresh cyber threats and change with changing attack strategies. High false-positive rates, sluggish response times, and the inability to dynamically learn from new attack patterns define current IDS systems as shortcomings. Although Reinforcement Learning (RL) is becoming increasingly popular for IDS enhancement, its implementation in practical security applications is difficult without a consistent and ideal RL framework. Finding the most efficient RL algorithm for IDS is still a challenge that calls for methodical analysis of several RL approaches to raise response efficiency and detection accuracy.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027103 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Advanced AI-Based Predictive System for Sudden Cardiac Arrest Prevention Using PCA and ARIMA Techniques

(51) International classification :A61B0005000000, A61B0005024000, G16H0050200000, G16H0010600000, G16H0050300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT Sudden Cardiac Arrest (SCA) is a critical medical emergency with high mortality rates. Early prediction and timely intervention are vital to improving survival outcomes. This research proposes an AI-driven predictive system that combines Principal Component Analysis (PCA) and Autoregressive Integrated Moving Average (ARIMA) techniques for SCA prediction. PCA is applied to reduce the dimensionality of large-scale physiological data, extracting essential features that are most relevant for prediction. ARIMA, a time-series forecasting model, is then employed to identify temporal patterns and forecast potential SCA events. By utilizing real-time patient data from wearable devices or monitoring systems, the system analyzes heart rate, electrocardiogram (ECG) signals, and other relevant physiological metrics to predict the onset of SCA. The integration of PCA with ARIMA improves the model's prediction accuracy by focusing on the most significant features and forecasting future abnormalities. The system is tested using historical patient data, demonstrating superior performance in detecting early warning signs compared to traditional approaches. This predictive framework holds potential for enhancing early intervention strategies, providing clinicians with actionable insights to prevent SCA and improve patient outcomes. The proposed model offers a promising step towards proactive cardiac care and personalized medicine.

No. of Pages : 22 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027104 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Hybrid Deep Learning Model for Enhanced Vehicle Detection and Segmentation in Autonomous Driving Systems

(51) International classification	:G06N0003045000, G06N0003080000, G06T0007110000, G06V0010820000, G06V0020580000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Hybrid Deep Learning Model for Enhanced Vehicle Detection and Segmentation in Autonomous Driving Systems Abstract: Safe and effective navigation of autonomous driving systems depends mostly on accurate vehicle recognition and segmentation. But because of occlusions, different lighting conditions, and highly inhabited surroundings, current deep learning models have great difficulty YOLO and SSD often lack sufficient segmentation accuracy even if they offer quick object detection. On the other hand, U-Net and Mask R-CNN provide exact segmentation but need large processing resources, so real-time deployment is not feasible. Strong global feature extraction powers of transformer-based models make them computationally costly for real-time applications. This work presents a hybrid deep learning framework combining Transformer-based architectures with Convolutional Neural Networks (CNNs) to solve these difficulties thereby improving both segmentation efficiency and recognition accuracy. While guaranteeing appropriate resource use, the proposed model efficiently balances segmentation accuracy with detection speed. This hybrid technique provides a feasible solution for autonomous driving systems running in dynamic surroundings since it makes real-time vehicle recognition and segmentation both scalable and practical. Keywords: DL, YOLO, SSD, U-Net, Mask R-CNN, Transformer Models, Convolutional Neural Networks (CNNs)

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027105 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Early Detection of Alzheimer's Disease (Ad) Using A Novel System And Methods Using LLMs

(51) International classification :G06F0040300000, A61P0025280000, G16H0050300000, A61B0005000000, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Early Detection of Alzheimer's Disease (Ad) Using A Novel System And Methods Using LLMs Abstract: This paper proposes early detection of Alzheimer's disease (AD) using a novel system and methods using LLMs.AD is a neurodegenerative disorder that progresses and impairs the cognitive functioning like memory, language and reasoning. Early diagnosis of such disorder should be a timely intervention. Here in this paper we use the invention powered by LLMs with advanced NLP to identify the cognitive impairments in early stages of Alzheimer's disease (AD). Machine learning framework trained patterns on linguistic data derived from speech and text data of affected people with AD are taken into consideration here. Next, the collected data will be done and preprocessing of user generated language data and analyse it with the LLM based model and finally generate predictive markers that indicate for cognitive decline. The trained model focuses upon various attributes of linguistic patterns such as lexical diversity, syntactic complexity, semantic coherence, speech hesitation and sentimental shifts and all factors that correlate to early stages of AD symptoms. LLM based advanced deep learning architectures and a multi modal approach will integrate the spoken and written language inputs which are collected from the sources and are transcribed , digital communications including cognitive responses. This system features a real-time interface that allows the affected person , caretakers and healthcare providers to input the language samples for analysis. Using a comprehensive linguistic assessment the system generates AD risk score which enables the early consultation and proper medical care ensured with data privacy and security through anonymization technique. The model continuously improves the diagnostic capabilities through an adaptive learning. In health care, this tool can serve as an efficient tool for screening and suggesting traditional diagnostic methods and reducing the existing procedures like PET scans or cerebro spinal fluid analysis. The model's explainability features allow clinicians to understand the linguistic markers contributes to the risk assessment with care and trust with usability. Furthermore, this same method can be extended to detect other neurodegenerative conditions like Parkinson's disease and mild cognitive impairment, dementia, broadening its utility.The cutting edge technologies like LLM with the neurolinguistic analysis provides scalable and accessible solution for early detection of AD. Efficiently analyzing natural language data with real time approach provides a ground breaking approach to identify early stages of AD which improves the timely medical interventions of the patient and also the patient outcomes.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027230 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BUOYANCY BASED FLOATING MICROBIAL FUEL CELL FOR GENERATING BIOELECTRICITY

(51) International classification :H01M0008160000, C02F0003000000, H01M0004900000, C02F0003200000, C02F0003280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a floating-type buoyancy microbial fuel cell (BFMFC) designed for bioelectricity generation from wastewater. The system comprises an anode electrode submerged in wastewater, a cathode electrode positioned in an upper chamber, and a floating unit that maintains stability on the water surface. A proton exchange membrane (PEM) made up of cement-supported conductive salts is integrated to enhance ion exchange and electron transfer efficiency. The anode, attached with biofilm, facilitates microbial oxidation, generating electrons that flow through external anode wires to the cathode, where oxygen reduction occurs. The system includes a data acquisition unit for real-time monitoring of voltage and power output. Additionally, a gas inlet/outlet is provided to regulate oxygen availability in the cathode chamber, optimizing bioelectricity generation. The invention offers a cost-effective, self-sustaining, and scalable solution for simultaneous wastewater treatment and renewable energy production.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027231 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FORMULATION AND EVALUATION OF GLICLAZIDE SOLID DISPERSIONS USING PEG 6000

(51) International classification	:A61K0009140000, A61K0031640000, A61K0009200000, A61P0003100000, A61K0009160000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a pharmaceutical preparation of Gliclazide solid dispersion formulation and a preparation method thereof. The Gliclazide solid dispersion formulation; wherein the raw material composition, comprising: Gliclazide and Polyethylene Glycol 6000 (PEG 6000) in the ratio ranging from 1:1 to 1:2; wherein the solid dispersion formulation is prepared by physical mixing and kneading method; wherein the Gliclazide solid dispersion formulation show drug release ranging from 90.11% to 99.68% within 45 minutes. The Gliclazide solid dispersion show Angle of Repose 25.88º; Carr's index 14.11%; Hausner ratio 1.25 and drug content 40.22mg, wherein the bioavailability of Gliclazide is improved by improving the solubility of Gliclazide and by improving its dissolution rate by preparing solid dispersions using PEG 6000. The Invitro dissolution parameters of Gliclazide solid dispersion formulation show T50 2.5 minutes; T90 20 minutes; K 0.0377 minutes-1 and R2 0.999. The drug release data of Gliclazide solid dispersions (GK2) before and after storage at different conditions show quite stable; and there is no significant change in drug release from the Gliclazide solid dispersions. The Gliclazide solid dispersion prepared by the invention shows rapid dispersion; improved dissolution rate, and increased bioavailability; and can be used in managing blood glucose levels in patients with Type-2 diabetes.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027232 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ELECTRIC POWERED-HEIGHT ADJUSTABLE WHEELCHAIR FOR ASSISTING DISABLED USERS AND METHOD THEREOF

(51) International classification :A61G5/10, A61G5/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Embodiments of the present disclosure relate to an electric powered-height adjustable wheelchair (100) for assisting disabled users and a method (400) for operating the same. The wheel chair (100) includes a structural frame (102) including wheels (120), an adjustable seat (106), a first set of linear actuators (108), a second set of linear actuators (110), a motor driver (130), a microcontroller (112) and an opening (114) on the adjustable seat (106). The first set of linear actuators (108) is placed at a front portion of a set of front legs (108-1) and a second set of linear actuators (110) is placed at a rear portion of a set of rear legs (110-1). The linear actuators (108, 110) are configured for adjusting the height and tilt of the seat (106). The microcontroller (112) is configured to allow the seat (106) to be tilted forward or backward for safe transfers of users.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027233 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVICE AND METHOD FOR AUTONOMOUS POLLINATION OF PLANTS

(51) International classification :A01H1/02, G01B17/00, G01S17/00, G01S19/26
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Embodiments of the present disclosure relate to a device (100) and a method (200) of autonomous pollination of flowering plants. The device (100) is configured to enhance agricultural productivity by addressing challenges like declining bee populations and inefficient manual pollination. Equipped with multispectral cameras (110), environmental sensors (112), a precision spraying unit (114), and a mechanical pollen dispensing unit (116), the device (100) identifies flowering plants, assesses their health, and ensures uniform pollination. Advanced obstacle avoidance with a LIDAR (106) and an ultrasonic sensor (108) enables safe navigation around branches and insects, while adaptive AI algorithms optimize flight paths based on real-time environmental data. Sustainable energy systems, including solar panels and piezoelectric harvesting, allow prolonged operation, reducing energy costs. The dual-mode pollination mechanism combines vibration-based pollen deposition and precision spraying, tailored to specific crop types. IoT connectivity enables real-time data sharing and analytics, offering insights for better crop management.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027234 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : QUANTUM-INSPIRED FEATURE SELECTION SYSTEM AND METHOD FOR CLASSIFICATION AND RECOGNITION OF FACIAL EMOTIONS

(51) International classification :G06V 10/82, G06N 10/60, G06V 10/70

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to a quantum-inspired feature selection system for classification and recognition of facial emotions. The system (102) includes processors (202) and a memory (204) storing instructions to: receive real-time facial image data from an imaging device (112). The processors (202) can pre-process the data using augmentation techniques, and extract low-level and high-level facial features using a pre-stored deep learning model. The processors (202) can optimize feature selection through a Quantum Memetic Algorithm (QMA) to enhance classification accuracy while reducing computational complexity. The processors (202) can compare the optimized feature set against facial emotion datasets to classify emotions such as happiness, sadness, anger, and surprise; and recognize real-time facial emotions based on classification. The system (102) can be implemented in mental health monitoring, human-computer interaction, security surveillance, and real-time emotion recognition in mobile and embedded systems, improving efficiency and accuracy in emotion detection.

No. of Pages : 29 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027235 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED APPARATUS FOR PLANT MAINTENANCE

(51) International classification :A01G9/12, A01G3/00, A01G3/08, G01B17/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to an apparatus (100) for banana plant maintenance, including a vertically positioned pole (106) partially embedded underground for stability. An inner ring (122) movably mounted around the pole (106) includes a set of caster wheels (108) to facilitate linear movement. An outer ring (124) encloses the plant and moves vertically along the pole (106). A solenoid actuator (128) engages with pre-drilled holes (120) in the pole (106) to lock the outer ring (124) at different heights. A plurality of ultrasonic sensors (116) emit ultrasonic waves to detect foliage proximity and distinguish aged leaves from healthy ones. A set of blades (114) prunes aged leaves while preserving healthy foliage. A microcontroller (112) enclosed within the inner ring (122) receives sensor data, controls the servo motor (110), solenoid actuator (128), and blades (114), and optimizes pruning actions based on foliage detection.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027322 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BORE WELL RESCUE ASSISTIVE DEVICE

(51) International classification : A62B99/00, B66D3/00, E04G3/32, G06T7/00, B25J19/02, B25J15/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A bore well rescue assistive device, comprising of a body 101 having an open base developed to retrieve a child from a bore well, multiple supporting stands 102 arranged in tripod-shaped arrangement installed with a winch 103 coiled with a flexible cable 104, an (AI)-based imaging unit 105 paired for detecting a depth at which the child to be rescued, a jaw chuck mechanism 106 to extend clamping jaws towards walls of bore, a pair of sliding units 107 that holds robotic arm 108 to securely grip the child, a pair of extendable plates 109 to position the plates 109 securely beneath the child's feet, a dual-axis slider 201 attached with an arm 202, a night vision camera 204 to detect the face position of the child, a display unit 110 ensuring accurate alignment of the oxygen mask 203.

No. of Pages : 25 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027323 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : REAL-TIME ANTI-PIRACY SURVEILLANCE AND RESPONSE SYSTEM FOR THEATRES

(51) International classification	:H04L0009400000, G06K0007100000, A61B0005369000, G06Q0050260000, H04M0003220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A real-time anti-piracy surveillance and response system for theatres, comprises of a QR code scanner 101 at the theatre entrance for ticket validation, coupled with a microcontroller using IoT to manage user access, a motorized barrier 102 controls entry, and LEDs 201 are used to guide users to their seats based on the shortest path determined by the microcontroller, a secondary QR scanner for authentication, multiple imaging units 203 to monitor mobile phone usage, detecting potential piracy behavior by identifying individuals operating mobile phones for extended periods, a vibrating motor 301 and display panel 302 at each seat provide first-level alerts, infrared emitters 204 offer a second-level defense against recording, if ignored, a communication module notifies theatre authorities, a pair of motorized plates 303 block the view of offenders via pneumatic rod 304.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027324 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : THERMODYNAMICALLY STABLE a-Fe2O3 MICROCUBES (MCs) COMPOSITION AND METHOD FOR SYNTHESIS OF THE SAME THEREOF

(51) International classification	:H04L0001000000, B82Y0040000000, C01G0049020000, B29C0039000000, B01J0035390000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A thermodynamically stable α-Fe2O3 microcubes (MCs) composition, comprising: i) 2.5-3.5% w/w of FeCl3.6H2O, and ii) 96.5-97.5% w/w of Cetyltrimethylammonium bromide (CTAB). A method for synthesis of the thermodynamically stable α-Fe2O3 microcubes (MCs) comprising the following steps: a) adding the precursor to 0.04 mol of CTAB, which turned into a yellow solution, followed by continuous stirring at 400-500 rpm for 20-40 minutes at room temperature to obtain a homogeneous solution, b) transferring the homogeneous solution into a 100 mL (nut and bolt type) Teflon autoclave, followed by subjecting the autoclave to a temperature of 100-150°C for 30-35 hours at a ramping rate of 3°C min−1 in order to obtain iron oxide microcubes (IOMCs), c) collecting the IOMCs after cooling to room temperature, followed by centrifugation and washing with purified with distilled water twice and absolute ethanol, respectively, to obtain the thermodynamically stable α-Fe2O3 microcubes (MCs).

No. of Pages : 30 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027325 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HEALTHCARE FACILITY QUEUE AND PATIENT MANAGEMENT DEVICE

(51) International classification	:G16H0040200000, G16H0040670000, G16H0010600000, A61B0005000000, A61B0005020500
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A healthcare facility queue and patient management device comprises of a plate 101 installed with a panel 102 to be affixed with a wall surface at entrance of a healthcare facility, multiple suction units 103 for affixing the plate 101 at the entrance, a motorized scissor mounting arrangement 104 to adjust height and rotation of the panel 102, the healthcare facilities' central database for retrieving and displaying details of medical practitioner, patient appointment status and schedule updates over a touch enabled display unit 106, an artificial intelligence-based imaging unit 105 for capturing and processing multiple images of surroundings, motorized sliding rail 107 for adjustable positioning of the display unit 106, a communication module for generating and sending a unique code to a patient's computing unit, a temperature sensor to detect body temperature of patients, a speaker 108 to announce patient sequence numbers and other commands in multiple languages.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027326 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI- FUNCTIONAL KEY STORAGE DEVICE FOR VEHICLES

(51) International classification :A44B15/00, G06T7/00, B25J19/02, B25J15/00, G03H1/22

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :
A multi- functional key storage device for vehicles, comprising of a housing 101 having a plurality of slots separated by plates 102, a telescopic rod 103 having a gripper 104 for gripping a vehicle key, an imaging unit 105 to determine vehicle of user being parked along with landmarks in vicinity of the vehicle, a laser emitter 106 mounted on the housing 101 via a ball and socket joint, to articulate the emitter 106 towards the parked vehicle to guide the user towards the parked vehicle, a holographic projection unit 107 project guiding cues, the user inputs a command via the user interface to unlock the vehicle by means of the key left within the vehicle to actuate the sliding unit 111 to translate the pneumatic pin 112 to align with an unlock button and the pin 112 to extend and press the unlock button for unlocking the vehicle.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027327 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI-FUNCTIONAL BEVERAGE AND SNACKS STORAGE DEVICE

(51) International classification : B65D25/40, B65D83/00, B25J19/02, B25J15/00, F16B47/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A multi-functional beverage and Snacks storage device, comprising a hollow-cylindrical shaped body 101 installed with a pair of plates 201 that segregates body 101 into at least three distinct sections, a curved shaped handle 102 allows user with a comfortable and ergonomic grip for easy handling, a pair of gimbal arrangement 103 stabilize body 101 and prevent tipping or falling, even when handle 102 is in motion or subjected to external forces, multiple suction units 104 engage and disengage based on specific detection parameters, a motorized iris unit 105 open / close lid for allowing dispensing of stored beverage from body 101, a LED (Light Emitting Diode) display 106 allows users to share images, text, or messages with computing unit to personalize drinking experience, an insulating sheet is wound around a motorized circular roller 107, to cover outer surface of body 101.

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

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(21) Application No.202541027328 A

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(54) Title of the invention : COCONUT OIL EXTRACTION DEVICE

(51) International classification	:C11B9/02, C11B1/00, G06T7/00, B25J19/02, B25J15/00
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A coconut oil extraction device, comprising a base 101 having a conical hopper 102 supported over base 101 for disposing coconuts into hopper 102, a screw conveyor 103 convey coconuts one by one into a chamber 104, a motorised cutting wheel 105 mounted within chamber 104, two L-shaped telescopic arms 106 having clamps 107 at the ends, grip coconut and position over wheel for deshelling of coconut, a cutting blade 108 cuts of deshelled coconut, the coconut is held within chamber 104 by two telescopic grippers 110, an imaging unit 111 record colour of coconut being cut, multiple heat lamps 113 and hot air blowers 114 dries of the coconuts, a spiral screw press 115 receive dried coconuts from tank 112 to compress coconuts for extraction of oil from coconut, a motorised drum 116 is rotated for a separation of impurities from the oil due to centrifugal force.

No. of Pages : 24 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027329 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTIMODAL JUICE EXTRACTION DEVICE

(51) International classification : A23N1/00, G06T7/00, B25J19/02, B25J15/00, A47J19/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
A multimodal juice extraction device, comprising of a housing 101 having an iris hole 102 for an opening and closing of the housing 101 for storage of fruits within a multi-section chamber 103, a compartment 104 for storing seasonings and water, an imaging unit 105 to determine type and dimensions of a fruit, a holographic projection unit 106 to project cutting of the fruit prior to inserting, an assembly for juicing of fruits, an L-shaped link 107 attached with a sliding unit 108, having a pair of hinged curved mesh plates 109 for pressing of fruits onto a circular flap 110, having a blade 111 and a plurality of iris aperture 112 for straining of extracted juice, a tank 113 positioned below the assembly to receive strained juice, a Peltier unit 119 alter and maintain a temperature of the juice as per user requirement.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025

(21) Application No.202541027330 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI-MODAL AIR CIRCULATION DEVICE

(51) International classification : F04D25/08, G06T7/00, B25J19/02, B25J15/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A multi-modal air circulation device comprises of a base 101 with a rigid vertical elongated member 102 mounted perpendicularly over the base 101 to mount a cage 103 via a sliding unit 104 arranged along the member 102 for imparting an air circulation through a plurality of motorised rotor blades 201 houses within the cage 103 with articulated movement via a ball and socket joint 116, an artificial intelligence-based imaging unit 105 installed with the member 102 to determine a number of occupants in vicinity and a distance of the occupants from the cage 103, a pneumatic actuator 106 embedded underneath the base 101 having a hook 107 at an end, for hanging of the base 101 from a surface, a plurality of locking units 108 disposed along a bottom surface of the base 101, for securing and stabilising the device in a hanging position.

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027331 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PALLADIUM ON BORON CARBON NITRIDE CATALYST COMPOSITION AND METHOD FOR SYNTHESIS THEREOF

(51) International classification :B01J0027240000, H01M0004380000, B01J0035390000, H01M0004134000, B82Y0040000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A palladium on boron carbon nitride catalyst for base free aminocarbonylation composition, comprises of: i) 0.1-0.2% w/w boric acid, ii) 0.2-0.3% w/w citric acid, iii) 0.7-0.9% w/w melamine, iv) 0.01-0.02% w/w palladium chloride, and v) 98-99% v/v ethanol. A method for synthesis of palladium on boron carbon nitride catalyst comprises of steps: a) mixing the boric acid, citric acid, and melamine and grinding into a fine powder, b) adding palladium chloride to powdered mixture and grinding to achieve a uniform distribution, c) dispersing powder in ethanol and stirring overnight and cooling, and removing ethanol using evaporation to obtain a dried mixture, d) grinding dried mixture in a fine powder, and performing thermal treatment to obtain particles, and e) collecting particles and washing multiple times with millicurie water and hot ethanol and further subjecting the mixture to high pressure vacuum oven to obtain palladium on boron carbon nitride catalyst.

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027342 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTION OF SURFACE TRACKING DEGRADATION IN HIGH VOLTAGE POLYMERIC INSULATORS

(51) International classification :G01R31/12, G01J3/443, G01N21/31, G01N21/17

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein is a system (400) to detect surface tracking degradation in high voltage polymeric insulators. The system comprises an insulator (406) coupled to a high voltage transformer (402) and an Optical Emission Spectroscopy (OES) module (416). The OES module (416) comprises a telescope (418) configured to collect an optical emission during one or more stages of discharge of the insulator (406). The OES module (416) further comprises a spectrometer (420) configured to acquire an emission spectrum by analyzing one or more optical characteristics of the collected optical emission during the one or more stages of discharge and an optical fiber (422) configured to connect the telescope (418) and a spectrometer (420). Further the system comprises a control module (424) configured to detect surface tracking degradation by analyzing dominant peaks in the acquired emission spectrum. FIG. 4

No. of Pages : 46 No. of Claims : 22

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027344 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ANTIBIOTIC LOADED PIPER BETEL AND PETROSELINUM CRISPUM BASED NANOPARTICLES COMPOSITION AND METHOD FOR SYNTHESIS THEREOF

(51) International classification :A61K0036670000, A61K0036889000, B22F0009240000, B82Y0040000000, A61K0036230000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An antibiotic loaded Piper betel and Petroselinum crispum nanoparticles composition, comprising: i) 0.005-0.015% w/w butanol extract of betel and parsley leaves, ii) 8-12% w/w dimethyl sulfoxide (DMSO), iii) 88-92% w/w 1mM silver nitrate solution, iv) 2.5-3.5×10-5 % w/w antibiotic, and v) 0.5-1.5% w/w distilled water. A method for synthesis of antibiotic loaded Piper betel and Petroselinum crispum nanoparticles comprising of steps: a) dissolving butanol extract of betel and parsley leaves in DMSO to obtain an extract solution, b) adding extract solution to silver nitrate solution and keeping on magnetic stirrer, subjecting to sonication to obtain a brownish color solution of silver nanoparticles, c) centrifuging nanoparticles and performing three repeated washes with distilled water to obtain silver nanoparticles pellet, d) dissolving antibiotic in distilled water to obtain an antibiotic solution, followed by adding pellets to antibiotic solution, e) incubating obtained mixture overnight and centrifuging, to obtain pellets of prepared nanoparticles.

No. of Pages : 20 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025

(21) Application No.202541027364 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT based AI-Integrated Preterm Infant Monitoring System in NICU

(51) International classification :A61B5/00, G16H50/20, G16H50/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The Smart Neonatal Guardian is a cutting-edge monitoring solution designed to enhance neonatal care in Neonatal Intensive Care Units (NICUs) by utilizing artificial intelligence (AI) and real-time data analysis. This state-of-the-art system incorporates an ESP32 microcontroller to process live physiological inputs from critical sensors, including heart rate monitors, temperature gauges, and oxygen saturation devices. Its targeted application for preterm infants, who face elevated healthcare risks, ensures continuous monitoring to address potential complications. Data generated through these sensors is systematically stored in an Excel spreadsheet and processed using machine learning (ML) algorithms, enabling pattern recognition and early identification of critical health conditions like neonatal sepsis and respiratory distress syndrome (RDS). This system facilitates timely medical interventions while supporting healthcare professionals in making data-driven decisions through actionable insights. Additionally, the integration of Internet of Things (IoT) technology permits remote monitoring, allowing caregivers to oversee patient health from afar. By merging AI, IoT, and predictive analytical tools, the Smart Neonatal Guardian promises to transform NICU protocols, offering preterm infants improved healthcare outcomes and raising the bar for efficiency and reliability in neonatal monitoring systems. Keywords: Preterm infant care, NICU, ESP32, Random Forest Algorithm, IoT, real-time health tracking

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027369 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HealthPredict 360: Latent Dirichlet Clustering for Proactive Disease Risk Detection

(51) International classification :G16H50/20, G16H10/60, G16H50/30, G16H50/70, G06N20/00, G06N3/08

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention introduces a novel disease risk prediction system, "HealthPredict 360," which leverages Latent Dirichlet Allocation (LDA)-based clustering technique and a probabilistic topic modeling method to analyze patient health records and predict potential disease risks. By employing these approaches, the system identifies latent patterns in electronic health records (EHRs), clinical reports, and lifestyle data to proactively assess disease susceptibility. The method integrates multi-modal patient data, including structured clinical attributes and unstructured physician notes, to enhance prediction accuracy. A machine learning pipeline optimizes feature extraction, model training, and risk assessment while ensuring data privacy through secure encryption mechanisms. The system aims to assist healthcare professionals in early disease detection, personalized treatment planning, and preventive care strategies.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027370 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Brain Tumor Detection And Classification Using Transfer Learning Model.

(51) International classification :G06T7/00, G06N3/08, G16H50/20, G16H30/40, G06T7/11
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Brain tumors are one of the maximum life-threatening neurological conditions, requiring early and correct prognosis for powerful treatment. This mission affords a switch mastering-primarily based totally version for the detection and type of mind tumors the use of MRI scans. By leveraging pre-skilled deep mastering architectures including ResNet50, VGG16, InceptionV3, and EfficientNet, the version efficaciously identifies and classifies mind tumors into benign, malignant, and regular classes with excessive accuracy and reliability. The gadget carries a believe verification mechanism that mixes self belief scores, calibration metrics, and uncertainty estimation to generate a believe rating. This rating complements the transparency and reliability of the version`s predictions, making it appropriate for medical decisionmaking. The version achieves an accuracy of 92-97% and generates exportable reports (PDF/JSON), such as MRI visualization, type results, and diagnostic recommendations. To enhance interpretability, the version offers heatmaps or interest maps highlighting the tumor region, assisting radiologists in visible confirmation. The answer is designed for real-time or near-real-time processing,

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027371 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Zero-Valent Iron Nanoparticles using Vigna Stipulacea seed extract.

(51) International classification :C02F0001280000, C02F0101200000, B01J0020020000, B01J0020280000, C02F0101100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
8. ABSTRACT The present invention relates to an advanced and eco-friendly approach for the remediation of heavy metal contamination in water bodies through the synthesis and application of zero-valent iron nanoparticles (ZVI NPs) mediated by Vigna stipulacea seed extract. This novel method leverages the bio-reduction capabilities of lignin and polyphenols present in the extract of Vigna stipulacea, a drought-resistant legume fodder plant, to synthesize highly efficient ZVI nanoparticles. The synthesized Vigna stipulacea-mediated zero-valent iron nanoparticles (VS-ZVI NPs) demonstrate exceptional adsorption capabilities for the removal of toxic heavy metals, specifically chromium (Cr) and zinc (Zn) ions from aqueous media. The production process involves an innovative green synthesis technique, eliminating the need for hazardous reducing agents, thereby ensuring cost-effectiveness, sustainability, and scalability for industrial applications. The synthesized VS-ZVI NPs were comprehensively characterized using multiple analytical techniques, including UV-Vis Spectroscopy, X-ray Diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), Energy Dispersive X-ray Spectroscopy (EDAX), Scanning Electron Microscopy (SEM), and Brunauer-Emmett-Teller (BET) surface analysis. The results indicate that the synthesized nanoparticles have a mean crystallite size of 30.65 nm, predominantly composed of zero-valent iron (Fe^0) and iron hydroxides. The nanoparticles exhibit magnetic saturation of 11.21 m emu and a high surface area of 199.189 m^2/g, which enhances their adsorption efficiency. Experimental studies demonstrated that VS-ZVI NPs achieved an outstanding adsorption efficiency of 92% for Cr ions and 95% for Zn ions under optimal conditions—a contact time of 50 minutes, a dosage of 0.02g/100 mL VS-ZVI NP, and a solution pH of 5. The adsorption kinetics of Cr ions adhered to a pseudo-second-order model ($R^2 = 0.9805$) and followed the Freundlich isotherm ($R^2 = 0.9894$), indicating multilayer adsorption with strong binding interactions. In contrast, Zn ion adsorption followed a Langmuir isotherm (qmax = 339 mg/g, $R^2 = 0.9$), suggesting monolayer adsorption onto a homogenous surface. These findings were further corroborated through SEM imaging, confirming efficient heavy metal ion uptake. This invention introduces a low-cost, agricultural waste-derived, and highly effective nanomaterial for water purification and environmental remediation. The developed VS-ZVI NPs serve as a scalable and biocompatible adsorbent, providing a sustainable solution to mitigate heavy metal contamination in water sources. The novel process offers a non-toxic, green, and commercially viable alternative to conventional chemical and physical treatment methods, marking a significant advancement in the field of water purification and environmental sustainability.

No. of Pages : 27 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :24/03/2025
(21) Application No.202541027372 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SARCASM DETECTION SYSTEM WITH CONTEXTUAL UNDERSTANDING

(51) International classification	:G06F0040300000, G06N0003080000, G06F0016350000, G06N0003044000, G06N0003088000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
SARCASM DETECTION SYSTEM WITH CONTEXTUAL UNDERSTANDING ABSTRACT A sarcasm detection system (100) with contextual understanding is disclosed. The system (100) comprising: a data acquisition unit (104) adapted to receive textual snippets from a computing device (102), and a processing unit (106) in communication with the data acquisition unit (104), The processing unit (106) is configured to: extract and preprocess textual snippets received by the data acquisition unit (104); apply a Bidirectional Encoder Representations from Transformers (BERT) to generate contextual embeddings from the extracted textual snippets; leverage self-attention mechanisms within the Bidirectional Encoder Representations from Transformers (BERT) to capture linguistic nuances and contextual dependencies in the extracted textual snippets; and classify the processed textual snippets as sarcastic or non-sarcastic using a SoftMax classification layer. The system (100) achieves a high validation accuracy of 91% and a weighted F1-score of 0.912, outperforming conventional sarcasm detection methods in both accuracy and reliability. Claims: 10, Figures: 6 Figure 1A is selected.

No. of Pages : 26 No. of Claims : 10

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(21) Application No.202541027376 A
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(54) Title of the invention : EVALUATING THE EFFECTIVENESS OF PEER-REVIEWED ENGLISH TEACHING METHODS

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(57) Abstract :
This scholarly paper delves into English language teaching methodologies, focusing on three innovative approaches: immersive teaching, task-based teaching, and reflective teaching. Each method offers a distinct pedagogical strategy aimed at enhancing language acquisition. By thoroughly assessing their effectiveness in improving learning outcomes, this study contributes to the academic discourse on optimal language teaching practices. Through an extensive review of literature and empirical evidence, it highlights the benefits and limitations of each approach. Immersive teaching surrounds learners with the target language in real-life contexts, replicating natural language acquisition. Task-based teaching emphasizes meaningful tasks that require language use, fostering practical communication skills. Reflective teaching encourages both teachers and learners to evaluate experiences, strategies, and outcomes, enabling continuous improvement. By offering a detailed comparison, the study provides educators with insights into selecting and adapting methodologies to different educational settings and learner needs, ultimately enhancing language instruction and fostering more effective learning environments.

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(54) Title of the invention : EXHAUST SILENCER OF WHEEL LOADING SHOVEL

(51) International classification :F01N13/00, F01N1/00, F02B77/13
(86) International Application No :NA
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(57) Abstract :
To reduce the operational intensity of loader drivers, it is crucial to develop intelligent operation methods for various loader stages. Traditional loader operation relies on manual control, requiring drivers to perform repetitive, high-frequency tasks, which significantly impacts the loader's energy efficiency. This paper explores intelligent operation strategies by analyzing multi-sourced experimental data to optimize loader performance. The proposed method enables automatic adjustment of the working device's attitude during the shoveling stage, reducing driver workload. In the loading and unloading stages, the system allows the working device to be lifted automatically to a preset angle while ensuring the bucket is leveled. By minimizing the driver's manual effort in different operational phases, the intelligent system enhances efficiency and reduces fatigue. This approach not only improves operational convenience but also enhances energy efficiency and economic benefits, making loaders more adaptable to modern industry demands.

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(21) Application No.202541027385 A
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(54) Title of the invention : Cloud Based Distributed Machine Learning Model Training System

(51) International classification :G06F0009500000, G06F0021620000, G06N0020000000, G06F0021600000, G06N0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This system leverages cloud computing infrastructure to distribute training tasks across multiple nodes, enabling parallel processing and faster model convergence.By utilizing dynamic resource allocation, the system optimizes compute, storage, and networking resources based on workload demands. Load balancing techniques further enhance efficiency by evenly distributing computational tasks to prevent bottlenecks. Security and data privacy are prioritized through encryption, access controls, and compliance with industry standards. The system also supports federated learning, enabling decentralized model training without exposing raw data, thereby enhancing privacy. Additionally, real-time monitoring and logging provide insights into system performance, allowing for proactive issue resolution and optimization.Heterogeneous hardware support, including GPUs, TPUs, and FPGAs, ensures optimal utilization of specialized hardware for deep learning workloads.

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(19) INDIA
(22) Date of filing of Application :24/03/2025

(21) Application No.202541027392 A
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(54) Title of the invention : AI DRIVEN RECOMMENDATION SYSTEM FOR E-COMMERCE PLATFORMS

(51) International classification :G06Q 30/00, G06N 20/00, G06Q 30/0282
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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Filing Date :NA

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(57) Abstract :
The rapid growth of e-commerce platforms has led to an increasing demand for personalized shopping experiences, driving the need for advanced recommendation systems. This paper presents an AI-driven recommendation system designed to enhance user engagement and satisfaction on e-commerce platforms. Leveraging machine learning algorithms, including collaborative filtering, content-based filtering, and deep learning techniques, the system analysis user behaviour, preferences, and historical data to generate highly accurate and personalized product recommendations. The proposed model incorporates real-time data processing, enabling dynamic adaptation to user interactions and evolving trends. Additionally, the system addresses challenges such as cold-start problems, scalability, and data sparsity through innovative solutions like hybrid recommendation approaches and contextual awareness. Experimental results demonstrate significant improvements in recommendation accuracy, user retention, and conversion rates compared to traditional methods. This AI-driven system not only enhances the shopping experience but also provides e-commerce businesses with valuable insights to optimize their strategies and drive revenue growth. The findings underscore the transformative potential of AI in revolutionizing e-commerce recommendation systems, paving the way for more intelligent and user-centric platforms.

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(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027406 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Optimizing Numerical and Analytical Methods for Accurate Solutions to Partial Differential Equations

(51) International classification :G06F0030280000, G06F0030230000, G06F0017130000, G06F0111100000, G06F0113080000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The proposed invention introduces an optimized system for solving partial differential equations (PDEs) by integrating advanced numerical, analytical, and artificial intelligence (AI)-driven techniques. Traditional PDE solvers face limitations in accuracy, computational efficiency, and stability, particularly for high-dimensional and nonlinear problems. The invention addresses these challenges by employing adaptive meshing, AI-based solver optimization, high-performance parallel computing, and hybrid analytical-numerical approaches. Additionally, it enhances boundary condition estimation, multi-fidelity modeling, and uncertainty quantification, enabling efficient solutions for stochastic PDEs. Applications span computational fluid dynamics (CFD), electromagnetics, biomedical engineering, financial modeling, and structural mechanics. By leveraging deep learning models and symbolic computation, the system significantly reduces computational overhead while ensuring precise solutions. This invention transforms PDE-solving methodologies, making them more scalable, efficient, and applicable to real-world industrial, scientific, and technological advancements, contributing to the next generation of mathematical modeling and simulation technologies.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541027407 A
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(54) Title of the invention : Role of soft skills in Recent Trends of the Technological World

(51) International classification :G06Q10/06, G06Q10/10, G06N20/00, G06N3/08
(86) International Application No :NA
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(87) International Publication No : NA
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Filing Date :NA

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(57) Abstract :
The proposed invention is an AI-driven automation system integrating machine learning, natural language processing (NLP), and the Internet of Things (IoT) to optimize decision-making and workflow efficiency across various industries. By leveraging real-time data analytics, predictive modeling, and intelligent automation, the system enhances productivity, minimizes manual intervention, and improves operational accuracy. Its modular and scalable design ensures adaptability for applications in healthcare, finance, manufacturing, smart cities, and more. AI-powered security measures protect sensitive data, while NLP-based human-computer interaction improves accessibility and user experience. The system's IoT capabilities enable real-time monitoring and predictive maintenance in industrial and urban infrastructure. Ethical AI principles ensure unbiased decision-making and compliance with data privacy regulations. Designed for flexibility, security, and efficiency, this invention represents a significant advancement in digital transformation, enabling businesses and organizations to operate more effectively in an increasingly automated and data-driven world.

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(54) Title of the invention : Performance Analysis and VLSI Implementation Of Modulation Techniques In Cognitive Radio

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(57) Abstract :
Cognitive Radio mechanisms are thought to be a favorable way to deal with the lack of spectrum, with the intention of reducing problematic issue that impacts the network's overall communication performance. Cognitive radios monitor whether Primary users (PUs) have any available idle or underused spectrum. The secondary user is allotted this unused spectrum without causing any disturbance for the first user. Spectrum sensing is an essential procedure for a cognitive radio system of communication to reduce disturbance between secondary and primary users. This research proposes a revolutionary Cognitive Radio Network (CRN) to overcome the shortage of spectrum resources. Artificial Bee Colony (ABC), an effective improvement method is employed to determine the primary and secondary user bands that are in use and those that are not. The cognitive radio communication approach that is being suggested allots unutilized spectrum to secondary users without interfering with prime users. The system performance is assessed by varying the transmitter-receiver combinations (4x4 and 2x2) and spectrum models (Rician and Rayleigh). The Bit Error Rate (BER) is evaluated using channel estimation techniques such as Minimum Mean Squared Error (MMSE), Zero Forcing (ZF), and Maximum-Ratio Combining (MRC). This work proposes the use of the integration of the Reconfigurable Modulation Scheme (RMS) with the Hamming Encoder (HE) greatly enhances interaction in Cognitive Radio (CR) systems. The system's design and implementation were carried out using Xilinx ISE 14.2 software to create the Field Programmable Gate Array (FPGA) based CR communication RMS and HE. The Spartan 6 FPGA hardware development board was used to assess the effectiveness of the RMS- HE-FPGA structure. Nevertheless, there are drawbacks to the spectrum sensing techniques used today, such as poor signal representation, low efficiency, and noise sensitivity. This research presents a novel design for cognitive radio networks' spectrum identification along with a deep learning approach to tackle these problems. Deep learning is used to extract energy as well as correlation features by utilising reinforcement learning and deep learning. To further capture time-shifted signal correlation, a Recurrent Neural Network (RNN) module is employed. Short- Time Fourier Transform (STFT) feature extraction is included to improve feature extraction. This research explores an innovative approach to modulation classification employing cutting edge methods for signal processing and hybrid deep learning models. The Smoothed Pseudo Wigner-Ville Distribution (SPWVD) is utilized for time-frequency analysis, which improves precision of modulation feature extraction. Furthermore, contour diagram representation and constellation diagram are employed as effective methods for transforming raw data, providing valuable insights into the modulated signals' characteristics. For the classification task, a novel hybrid model combining Convolutional Neural Networks (CNN) and Bidirectional Long Short-Term Memory (BiLSTM) networks is proposed. The fusion of information from SPWVD, contour diagrams, constellation diagrams, and denoised signals results in a comprehensive feature representation, enabling the hybrid CNN- BiLSTM model to make informed and precise modulation classifications.

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(12) PATENT APPLICATION PUBLICATION
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(21) Application No.202541027435 A
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(54) Title of the invention : Solar-Powered Genetically Engineered Biofluorescent Trees for Sustainable Urban Lighting

(51) International classification :F21Y0115100000, F21S0008080000, G06Q0050260000, F21W0131103000, F21S0002000000
(86) International Application No :NA
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(57) Abstract :
The proposed invention introduces solar-powered genetically engineered biofluorescent trees for sustainable urban lighting. By integrating bioluminescent genes from naturally glowing organisms with advanced genetic engineering techniques, these trees emit visible light, reducing the reliance on conventional streetlights. Solar panels capture and store energy during the day to enhance or sustain fluorescence at night, ensuring reliable illumination. This system offers environmental benefits by lowering carbon emissions, promoting urban greening, and minimizing light pollution. Economically, it reduces energy consumption and maintenance costs compared to traditional lighting. Aesthetically, it enhances urban landscapes with a soft, natural glow. The invention addresses challenges related to genetic stability, regulatory approval, and public perception while offering versatile applications beyond street lighting. With advancements in biotechnology and renewable energy, solar-powered biofluorescent trees represent a transformative solution for sustainable urban development.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :24/03/2025

(21) Application No.202541027436 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Nano-Engineered Solar Devices for Eco-Friendly Waste Recycling

(51) International classification :G06Q0010063700, C02F0001000000, C02F0001320000, C02F0001140000, G06Q0010300000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed invention introduces nano-engineered solar devices for eco-friendly waste recycling, leveraging advanced nanomaterials to harness solar energy for efficient waste decomposition and resource recovery. These devices utilize photocatalytic and thermoelectric processes to convert organic and inorganic waste into valuable byproducts such as biofuels, fertilizers, and clean water while minimizing environmental pollution and greenhouse gas emissions. By overcoming the limitations of conventional solar technologies through enhanced light absorption and charge transport, the system operates effectively in low-light conditions, making it scalable and adaptable for urban, industrial, and remote settings. This sustainable approach promotes a circular economy by reducing fossil fuel dependency and operational costs while aligning with global sustainability goals. The integration of digital technologies, such as IoT and AI, further optimizes performance and maintenance, offering an innovative, eco-friendly solution for waste management, environmental conservation, and resource efficiency.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027444 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WATER-SOLUBLE SODIUM DIACETATE TABLET FOR FOOD PRESERVATION AND METHOD OF MANUFACTURING

(51) International classification :C07C53/10, A23K20/105, A23L3/3508, A61K31/19, A61P1/12, C07C51/41

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a water-soluble sodium diacetate tablet for preserving food products, such as broken wheat, grains, pulses, spices, and flour. The tablet comprises sodium diacetate (30%), vinegar (5% acetic acid, 30%), sodium bicarbonate (30%), and a binder (10%), dissolving in water to form an antimicrobial solution with a pH of 4.6–4.8. The solution is applied via spraying or mixing to inhibit microbial growth, offering a convenient, eco-friendly, and effective alternative to traditional preservatives. The tablet ensures precise dosing, uniform application, and compliance with FSSAI standards, extending food shelf life sustainably.

No. of Pages : 19 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027453 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DESIGN AND IMPLEMENTATION OF SMART RAILWAY COACH IDENTIFICATION, FIRE SAFETY AND MAPPING USING IOT

(51) International classification	:H04W0004800000, G06F0021570000, G06V0020400000, G06N0005022000, G08B0017060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
This engineering project creates a strong Smart Railway Coach system that combines exact identification, critical fire detection, and dynamic mapping using an integrated IoT architecture. By deploying RFID tags and GPS modules in conjunction with modern thermal sensors, each coach's unique identity, location, and fire status are continuously sent to a centralized platform via edge computing. This enhanced data is processed in a sophisticated manner, resulting in real-time digital maps shown on a Human-Machine Interface (HMI) for operators. The incorporation of fire detection capabilities, which use threshold-based algorithms and quick alarm mechanisms, dramatically improves safety standards. This technology goes beyond simple tracking, giving predictive analytics and total situational awareness, improving operational efficiency and passenger safety while opening the road for data-driven development in railway transportation.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027454 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INNOVATIVE DRUG-ELUTING DENTAL IMPLANTS FOR POST SURGICAL INFECTION CONTROL

(51) International classification :G09B0019060000, G06Q0050200000, G09B0007000000, G09B0019000000, G09B0007020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
This scholarly paper delves into English language teaching methodologies, focusing on three innovative approaches: immersive teaching, task-based teaching, and reflective teaching. Each method offers a distinct pedagogical strategy aimed at enhancing language acquisition. By thoroughly assessing their effectiveness in improving learning outcomes, this study contributes to the academic discourse on optimal language teaching practices. Through an extensive review of literature and empirical evidence, it highlights the benefits and limitations of each approach. Immersive teaching surrounds learners with the target language in real-life contexts, replicating natural language acquisition. Task-based teaching emphasizes meaningful tasks that require language use, fostering practical communication skills. Reflective teaching encourages both teachers and learners to evaluate experiences, strategies, and outcomes, enabling continuous improvement. By offering a detailed comparison, the study provides educators with insights into selecting and adapting methodologies to different educational settings and learner needs, ultimately enhancing language instruction and fostering more effective learning environments.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027469 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NOVEL POLYMER COMPOSITE RADIATION SHIELD

(51) International classification :C08L 83/04, C08K 3/08, CC8K 3/011, B29C 35/02, B28B 11/24
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein is a fabrication method and a polymer composite radiation shield designed to provide effective gamma-ray attenuation. The composite comprises a polymer matrix of liquid silicone rubber, reinforced with high atomic number (Z) fillers including tungsten in a fixed concentration and antimony in a varying concentration, to enhance shielding performance across different gamma-ray energy levels. The disclosed fabrication method includes mechanical mixing of the polymer and fillers for a predetermined duration to ensure homogeneous dispersion, followed by vacuum treatment to remove trapped air bubbles, improving material density and shielding efficiency. A polymerization catalyst is introduced to initiate cross-linking and enhance structural integrity. The composite is then cast into a mold of predetermined thickness and subjected to a two-stage curing process, initial curing at room temperature for 24 hours, followed by post-curing in a vacuum oven at 80°C for 8 hours.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027488 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FLEXIBLE AND BIODEGRADABLE GUAR GUM POLYMER FILM BASED TENG [G-TENG]

(51) International classification :C08L 101/16, C08J 5/18, C08L 5/02, H02N 1/04

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Flexible and biodegradable guar gum polymer film based TENG [G-TENG). The triboelectric nanogenerator comprising of a biodegradable guar gum thin film as positive triboelectric layer and biocompatible ecoflex film as negative triboelectric layer wherein a composite film of Gr@GG is used as conductive electrode for both the triboelectric layers wherein the fabricated G-TENG device works on double electrode and contact–separation mode. When mechanical force is applied to G-TENG, a synergistic interaction occurs between guar gum and ecoflex tribo layer which leads to contact electrification and electrostatic induction thereby initiating the charge transfer phenomenon at molecular level [FIG. 1].

No. of Pages : 33 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027489 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ORGANIC STAIN REMOVER COMPOSITION FOR SKIN TO REMOVE TEXTILE DYE STAINS AND LABORATORY CHEMICAL STAINS

(51) International classification :A61K8/18, C11D3/50, C11D3/382, C11D17/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Organic stain remover for skin to remove textile dye stains and laboratory chemical stains. The process involves in extraction of organic oil from cinnamon bark, lavender flowers, lemon peel, olive fruit, orange peel, lemongrass leaves, and peppermint leaves by steam distillation techniques. The exfoliants were prepared by grinding oatmeal, rice, and coffee into fine powders wherein the vitamin E was added as a preservative to the obtained Aloe vera gel. Further, 3.0% v/v of white vinegar and 0.5% w/v of citric acid were incorporated in the composition and the composition was made up to 100mL using autoclaved sterile distilled water wherein the components were mixed well to obtain uniform consistency and stored in a clean, dry bottle [FIG. 1].

No. of Pages : 28 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027490 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HYBRID SYSTEM FOR INTELLIGENT MUSEUM ROUTING AND SCHEDULING OPTIMIZATION

(51) International classification :G06Q10/04, G06Q50/14
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Smart intelligent museum routing and scheduling optimization system and method thereof. A system dynamically creating personalized routes using a hybrid approach that integrates A* Pathfinding algorithm, Multi-Criteria Decision-Making (MCDM), and Ant Colony Optimization (ACO) for enhancing museum experience of the visitors based on their age and preferences through a mobile app or kiosk wherein the A* Pathfinding algorithm to calculate an efficient route based on exhibit proximity wherein the MCDM module refines the route, tailoring it to the visitor's age group by considering user specific factors (like educational content and accessibility) wherein the ACO algorithm continuously optimizes the route in real time, responding to crowd density and congestion data collected from sensors to ensure smooth visitor flow [FIG. 1].

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027491 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ERGONOMIC ROPE CLIMBER

(51) International classification	:A62B1/14, A62B1/06, A63B27/00, A62B1/06
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Ergonomic rope climber. The rope climber (100) comprises of a handle unit (110) configured with a lever mechanism (120) wherein the handle unit (110) has a hand gripper (130) made of rubber material wherein the climber applies pressure on the lever mechanism (120) in order to lock and release the lever head portion (140) of the handle (110). The lever mechanism (120) grips the rope when pressure is applied wherein the guideways (150) in the handle unit (110) prevent lever misalignment. The user climbs by applying pressure on the lever mechanism (120) with the upper hand, increasing the gripping force wherein the lower hand is disengaged and repositioned above the upper hand to repeat the process wherein a spring force returns the lever (120) to its original position [FIG. 1].

No. of Pages : 16 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027515 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD TO ENHANCE EMPLOYEE WELL-BEING AND MENTAL HEALTH BY UTILIZING A HUMAN RESOURCE MANAGEMENT (HRM) MODEL

(51) International classification	:G06Q0010105000, G16H0020700000, G06Q0050140000, E21B0007040000, G06Q0010105700
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

The present invention represents a comprehensive Human Resource Management (HRM) model-based method tailored to enhance employee well-being and mental health in the tourism industry. The method initiates by identifying the human resource management challenges and classifying them to implement health policy for the promotion of mental health among the employees followed by defining the organizational culture by encouraging free-flowing communication and initiating, employee development practices to advance the knowledge and skill base within the organizations. Further, the model-based method follows up on the status of the employee's well-being and mental health frequently and performs, employee satisfaction surveys, to help with work-life balance. Figure 1

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027520 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ENTANGLEMENT-BASED SECURE COMMUNICATION PROTOCOL FOR QUANTUM NETWORKS

(51) International classification :H04L0009080000, H04B0010700000, H04L0009400000, H04L0009000000, H04L0009160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Quantum communication has emerged as a transformative method for secure information exchange, utilizing the core principles of quantum mechanics. This paper introduces a secure communication protocol for quantum networks based on entanglement, guaranteeing unconditional security via quantum entanglement and the no-cloning theorem. The protocol utilizes entangled photon pairs to create secure communication channels, wherein any eavesdropping attempt disturbs the quantum state, rendering intrusion detectable. To address distance constraints and photon attenuation, the protocol incorporates quantum repeaters, facilitating long-distance and multi-node quantum networking. We propose an optimized strategy for entanglement distribution that improves the scalability and efficiency of the network. Through theoretical analysis and simulations, we validate the protocol's robustness, resilience to attacks, and feasibility for real-world quantum communication systems. This research advances quantum cryptography and establishes a foundation for the creation of a practical and secure quantum internet.

No. of Pages : 11 No. of Claims : 5

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(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027521 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN INTELLIGENT APPROACH TO PREDICT DIABETES FOR ADOLESCENT WOMEN IN URBAN AREAS

(51) International classification :G16H0050200000, G06N0020200000, G16H0050300000, G16H0010600000, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This patent introduces a novel framework for the early prediction of diabetes in urban adolescent females. The proposed approach utilizes clinical data, lifestyle surveys, and continuous monitoring from wearable devices to integrate diverse data sources for personalized risk assessments. The framework utilizes sophisticated feature engineering methods and ensemble machine learning algorithms, including logistic regression and deep neural networks, to elucidate the complex interactions among biometric, behavioural, and socio-economic variables. The system dynamically adapts to emerging health trends through real-time data updates, thereby improving predictive accuracy and enabling timely interventions. The model's incorporation into clinical decision support systems and mobile health applications highlights its capacity to revolutionize conventional healthcare delivery through the encouragement of proactive, data-informed preventive strategies. The framework prioritizes ethical considerations, ensuring rigorous adherence to data privacy and regulatory standards to protect sensitive health information. This approach signifies a substantial advancement in personalized healthcare, providing an effective instrument to address the increasing prevalence of diabetes among urban adolescents.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027524 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A Secure iBeacon Ecosystem for Women's Safety with Real-Time Threat Detection in IoT Communication

(51) International classification :G08B0025010000, A61B0005000000, G08B0021020000, A61B0005024000, G08B0021040000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
Women’s safety is a critical concern in today’s society, with increasing incidents of harassment, assault, and violence. Existing safety measures such as mobile applications and self-defense tools often require manual activation, making them ineffective in high-risk situations where the victim may be unable to respond. To address this issue, this project proposes an IoT-based women safety system that enables real-time monitoring, automated distress detection, and instant emergency alerts. The system is designed using an ESP32 microcontroller, which acts as the central processing unit, integrating multiple sensors and communication modules. A force sensor detects physical assault, while an emergency switch allows the user to send an instant SOS alert. Additionally, a pulse sensor continuously monitors heart rate variations, which may indicate panic or distress. A MEMS sensor is included to detect sudden movements, such as falls or forceful impacts, enabling automatic emergency detection. For real-time tracking and communication, the system utilizes a GPS module to determine the user’s precise location and a GSM module to send emergency alerts containing location details to predefined contacts, such as family members or law enforcement agencies. Furthermore, IoT cloud integration allows remote monitoring, enabling authorized personnel or guardians to track the user’s status from anywhere. The system also features an LCD display to provide real-time feedback on system status and alerts. By leveraging sensor-based automation, IoT connectivity, and real-time communication technologies, this smart safety system provides a proactive and reliable solution for women’s protection. Unlike traditional methods, which depend on manual activation or external intervention, this system ensures faster emergency response, increased accuracy in distress detection, and enhanced user security.

No. of Pages : 7 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025

(21) Application No.202541027542 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT Operated Grass Cutting Machine

(51) International classification :A01D34/00, A01D101/00, A01D34/835, G05D1/622, B60L8/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The IoT-operated grass-cutting machine is a modern solution that combines automation and intelligent connectivity to make lawn maintenance easier and more efficient. Powered by a microcontroller and equipped with sensors such as ultrasonic for obstacle detection, GPS for navigation, and environmental sensors for monitoring temperature, humidity, and soil moisture, the machine operates autonomously. Users can control and monitor the machine remotely via a mobile app, allowing them to start, stop, or schedule mowing tasks from anywhere. The machine uses real-time data to navigate the lawn, detect obstacles, and ensure an even cut while avoiding collisions with objects. The system also provides feedback to the user, such as battery status and error alerts, enhancing the overall user experience.

No. of Pages : 4 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027544 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED TERRAIN ADAPTIVE SPRAYING SYSTEM

(51) International classification :B64C39/02, B64U50/19, B64U10/10, B64D1/18, G06T7/00, G06V10/00, A01C23/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The system (100) comprising an airboat (102) installed with multiple wheels, an imaging unit (110) synced with a LiDAR (Light Detection and Ranging) sensor (112) to determine type of terrain of the field, multiple proximity sensors (114) are configured to identify obstacles, a computing unit (116) installed with a user interface (118) to enable a user to select an area over which a specific chemical agent is to be sprayed, a microcontroller (120) including a data input module (124), a database (126), an identification module (128), an evaluation module (130), a navigation module (132) and an output module (134) that provides output relating to evaluated directions, number of plant rows, propulsion speed and amount of user-specified chemical agent, multiple propellors (136) actuates to provide propulsion to the airboat (102) and multiple sprayers (140) actuates to spray the evaluated amount of the user-specified chemical agent over the user selected area.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027545 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : IRON VANADATE NANOPARTICLES COMPOSITION AND SYNTHESIS METHOD THEREOF

(51) International classification	:A61K0036190000, H01M0004620000, H01M0004580000, H01M0004360000, H01M0004587000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Disclosed herein is an iron vanadate nanoparticles composition (100) that comprises an aqueous leaf extract (102) 3g in 50 ml distilled water and acts as a reducing agent, a vanadate precursor (104) of 1.5g acts as a source of vanadate ions, an iron precursor (106) 1 g acts as a source of iron ions, a thermoplastic polymer (108) of 0.5 mg used as a binder and a carbon-based material (110) with 1*1cm2 acts as a conducting substrate, solvents (112) including ethanol and N-Methyl-2-pyrrolidone. The aqueous leaf extract (102) is made from Justicia Wynaadensis leaves. The vanadate precursor (104) is ammonium metavanadate. The iron precursor (106) is ferric nitrate. The thermoplastic polymer (108) is polyvinylidene difluoride. The carbon-based material (110) is Toray carbon. The composition (100) is used as electrocatalyst for the development of high-performance supercapacitor electrodes.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027551 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Efficient Management of Social Networking Principles for Dynamic Application Network Clustering for Effective Governance

(51) International classification :H04L0047724000, G06F0018230000, H04M0007120000, G16H0050200000, G06Q0050260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The invention presents a system and method for the efficient management of governance in distributed application networks using dynamic network clustering based on social networking principles. By leveraging influence-based clustering, real-time adaptation, and decentralized decision-making, the system optimizes resource allocation and policy enforcement, ensuring scalable, flexible, and transparent governance. The approach is scalable to large systems and provides resilience, transparency, and improved system efficiency in managing complex networks.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027554 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Method for Automated Food Image Classification Using Deep Learning

(51) International classification :G06V10/82, G06N3/045, G06V20/68, G06N3/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention provides a method and system for automated food image classification using deep learning architectures such as SqueezeNet and VGG16. The system involves preprocessing food images, training the model using convolutional layers, and optimizing the model's performance through advanced techniques such as batch normalization, dropout, and feature extraction. The system preprocesses food images, extracts features using convolutional layers, and classifies the images using a softmax function. The method involves optimizing the performance of the model with techniques such as batch normalization and dropout layers to prevent overfitting. The system is computationally efficient and can be deployed on mobile devices for real-time food recognition, making it ideal for applications in healthcare, food tracking, and retail.

No. of Pages : 32 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027555 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GP Next-Gen Underwater kites for Tidal Energy: Wireless Power Transmission

(51) International classification :F03B0013260000, F03B0017060000, F03D0005000000, B64C0031060000, E02B0009080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
This invention pertains to an advanced underwater kite system for tidal power production, intended to surpass limitations of current technologies by enhancing efficiency, longevity, and deployability. This invention pertains to an advanced underwater kite system for tidal power production, intended to surpass limitations of current technologies by enhancing efficiency, longevity, and deployability. One of the major innovations of the invention is a buoyancy control system that uses a reaction between Alka-Seltzer and water to produce CO_2 gas, filling a balloon-like device when the kite has reached a set depth, which makes it float back up to the surface. In contrast to the conventional underwater kites based on wired power delivery, the current invention uses wireless energy transfer technology, without any need for expensive and fragile underwater cables. The system is efficiently functional even with low-speed tidal currents, rendering it appropriate for more sites. The kite frame is constructed of corrosion-resistant materials like carbon fiber, marine-grade stainless steel, and ceramic bearings, which guarantee long-term performance with low maintenance. A high-efficiency neodymium magnet-based generator provides maximum energy conversion, and an AI-based control system adjusts the kite's figure-eight or circular flight path for maximum power generation. A self-adjusting buoyancy control system also enables the kite to hold an optimal position in changing ocean conditions.This scalable, modular, and environmentally friendly underwater kite system offers a cost-competitive and effective approach to harnessing tidal energy, lowering reliance on fossil fuels while minimizing environmental footprints.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027601 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ROLE OF REMOTE WORK AND DIGITAL COLLABORATION TOOLS IN SHAPING EMPLOYEE PRODUCTIVITY AND WORK-LIFE BALANCE

(51) International classification :G06N20/00, G06Q10/0631
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an AI-powered system for enhancing remote work productivity and work-life balance through intelligent workload management, collaboration optimization, and well-being tracking. The system comprises an AI-driven productivity management module that monitors employee engagement, predicts productivity trends, and optimizes work schedules. An intelligent collaboration platform integrates AI-powered chatbots, automated meeting summarization, and adaptive notification management to streamline communication. A workload optimization and wellness monitoring system tracks work intensity, stress levels, and digital interactions to provide real-time recommendations for improved well-being. A sentiment analysis module assesses employee engagement and facilitates timely interventions, while security and compliance management ensure secure remote operations. By using machine learning and real-time analytics, the invention optimizes task distribution, reduces digital fatigue, and fosters a balanced and efficient remote work environment.

No. of Pages : 19 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027603 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INNOVATIVE APPROACHES TO LANGUAGE LEARNING THROUGH AI AND BIG DATA

(51) International classification	:G06F 40/00, G06F 40/30, G06N 20/00, G06N 3/00
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides an AI-driven and big data-powered language learning system that personalizes and optimizes language acquisition through machine learning, natural language processing (NLP), and real-time adaptive learning algorithms. The system continuously assesses a learner's proficiency, engagement, and common errors, dynamically adjusting lessons using reinforcement learning techniques. A conversational AI tutor offers real-time feedback on pronunciation, grammar, and syntax, while big data analytics refine learning pathways based on global learning trends. Additionally, augmented reality (AR) integration enables immersive language practice in real-world scenarios. This innovative approach enhances fluency, retention, and engagement, making language learning efficient, interactive, and highly personalized.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027604 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Retinal images fundus prediction using convolution neural network

(51) International classification :G06T5/60, A61B3/10, G06N3/0475, G06T3/20, G06T7/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Abstract: The present invention is a retinal images fundus prediction using convolution neural network, method claim, Source-Free Unsupervised Domain Adaptation for Medical Image Enhancement (SAME) an approach designed to enhance medical images without relying on source data. SAME is in two aspects: first step the enhancement and adaptation of medical imaging models takes place during the inference phase and second step, it uses test data which is normally not utilized in conventional practices, that combines structure preserving enhancement with knowledge distillation for source-free domain adaptation; the structure preserving enhancement protocol is based on synthesized training data, which is then attacked by a teacher-student framework for knowledge distillation.

No. of Pages : 6 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027608 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Using biochar as carbon sink enhancement material in cement concrete composites.

(51) International classification :C10B0053020000, C04B0040000000, G01N0033380000, G06Q0030018000, C04B0014060000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
This invention relates to the field of construction materials and, more specifically, to the formulation and use of cement concrete composites enhanced with biochar to improve their carbon sink capabilities. The invention incorporates biochar, a stable carbon-rich byproduct derived from the pyrolysis of biomass, into cement concrete mixtures. The integration of biochar not only sequesters carbon dioxide effectively but also enhances the mechanical properties of the concrete. The technical problem addressed by this invention is the high level of carbon emissions associated with conventional cement concrete production. By incorporating biochar, which is a highly porous material with a considerable carbon storage capacity, the composite material not only captures and stores carbon dioxide but also reduces the overall carbon footprint of construction activities. The proposed invention provides a novel method of enhancing the environmental sustainability of concrete by embedding biochar within the matrix. This method significantly improves the carbon sequestration potential of concrete without compromising, and potentially enhancing, its structural integrity and durability. The use of biochar as an additive in concrete presents a dual advantage: it contributes to the reduction of greenhouse gas emissions and improves the material properties of concrete, making it more durable and robust. The invention is particularly applicable to the construction industry, where sustainable building materials are increasingly demanded to address environmental concerns and regulatory requirements. It offers a practical and innovative solution for making construction activities more sustainable by turning concrete into an active carbon sink.

No. of Pages : 4 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027610 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Conceptual Resilience Framework for Sustainable Gendered Language Assessment in Literary Works

(51) International classification :G09B19/00, G06Q50/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Gender roles in society have been shaped and strengthened through different means. Language is often used as a powerful tool to enhance the established gender roles in any society. The proposed study aims to explore a structural model for studying the gendered language used in literature by examining the impact of linguistics, narrative, and discursive elements of language in reiterating the gender structure of society. The study uses T D Ramakrishnan's novels Francis Itty Cora, and Sugandhi Alias Andal Devanayaki, as case studies and tries to explore the gendered language through the lens of Critical Discourse Analysis. The proposed model has three levels of analysis. The lexical and semantic analysis explores the word choices, metaphors, and connotations used in the novels to identify the gendered biases in the language. The syntactic and narrative structure analysis focuses on how the different genders are positioned in the novels and the patterns of voice and sentence structures used by male and female characters. Historical and contextual correlation is the way to map gendered language in the existing sociopolitical, historical, and cultural framework to decode the established gender roles and explore the mechanism of systemic inequalities. The proposed model helps to identify the working of gendered language in society and how the systems utilise language to strengthen the deep structures of oppression, agency, and resistance in society. This invention presents a model for analyzing gendered language in literary texts, incorporating lexical, syntactic, discourse, and cultural dimensions. Using Francis Itty Cora and Sugandhi Alias Andal Devanayaki as a case study, the model identifies gender biases and their sociocultural implications, aiding researchers in deconstructing linguistic patterns in literature.

No. of Pages : 7 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027615 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Fusion-Based Image Enhancement for Night Time Traffic Monitoring and Analysis

(51) International classification :G06T0005700000, F21V0008000000, G06T0005600000, H04N0019176000, H04N0009680000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Low-light image enhancement is a significant component of intelligent transportation system(ITS) for improving night-time traffic monitoring. The traditional approaches are hindered by computational inefficiency, colour distortion, and noise amplification. This paper proposes a new Fast HSI(FHSI) colour space & QRCP Based Enhancement (QRCPE) model to overcome these challenges. The FHSI model reduces hue and saturation computation, there by being more computationally efficient than the conventional HSI. The QRCPE model boosts brightness by enhancing diagonal elements in an orthogonal decomposition model, which guarantees efficient light improvement with retained image details NTM, SICE and Ex-Dark datasets experiments demonstrate that FHS I - QRCPE generates improved enhancement with reduced noise and improved visual quality compared to traditional methods. The suggested method is most appropriate for real -time ITS applications with a requirement for fast and effective low-light improvement.

No. of Pages : 15 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027616 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : 5G-ENABLED AI-BASED NETWORK TRAFFIC OPTIMIZATION FOR SEAMLESS IOT CONNECTIVITY

(51) International classification :H04L0045000000, G06N0020000000, H04L0043087600, H04W0028020000, H04L0047120000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a 5G-enabled AI-based network traffic optimization system designed to enhance seamless IoT connectivity by dynamically managing bandwidth allocation, congestion control, and routing strategies. The system integrates machine learning (ML), deep learning (DL), edge computing, and predictive analytics to intelligently predict, detect, and mitigate network congestion in real time. It comprises an AI-based network traffic predictor, an adaptive routing and load-balancing module, and an edge-based congestion control system, which collectively optimize data transmission, reduce latency, and ensure efficient network utilization. Additionally, a blockchain-based security mechanism ensures secure, authenticated, and tamper-proof communication across IoT devices. By leveraging AI-driven traffic orchestration and dynamic spectrum management, the system significantly improves network performance, reliability, and energy efficiency, making it ideal for applications in smart cities, industrial IoT, and autonomous vehicle communication.

No. of Pages : 20 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027620 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INVESTMENT AWARENESS IN FINANCIAL ASSET AND PREFERENCE OF FINANCIAL INTERMEDIARIES IN EQUITIES TRADING

(51) International classification :G06Q40/06, G06Q40/04, G06N20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention provides a system and method for assessing investment awareness and recommending financial intermediaries in equities trading using Artificial Intelligence (AI), Machine Learning (ML), behavioral finance, and data analytics. The system comprises an Investment Awareness Assessment Module (IAAM) that evaluates an investor's financial literacy, risk tolerance, and market understanding through interactive assessments and sentiment analysis. A Financial Intermediary Recommendation Engine (FIRE) intelligently matches investors with suitable brokerage firms or robo-advisors based on trading behavior and preferences. An AI-Enabled Behavioral Finance and Investment Coaching System offers real-time investment insights, risk mitigation strategies, and portfolio recommendations. Blockchain technology ensures data security and transparency, while an Interactive Financial Education Platform (IFEP) provides personalized learning paths to enhance investor knowledge. This invention empowers investors by offering data-driven decision-making support, fostering improved financial literacy, and optimizing investment choices

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027641 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART VISION SECURE ATM: REAL-TIME MONITORING AND ALERTS TO ENHANCE SECURITY AND USER EXPERIENCE

(51) International classification :G07F0019000000, G06Q0020400000, H04L0009400000, G06V0040160000, G06F0021320000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
Smart Vision Secure ATM is an advanced automatic teller machine designed to bring enhanced security, convenience, and customer experience with the use of emerging technologies. The ATM makes use of facial recognition and biometric authentication to securely identify the users and prevent unauthorized use and fraud. Utilizing threat detection by AI, the ATM actively monitors user activities and detects abnormal behavior while refraining from potential security attacks. With high-definition observation cameras and tampering detection sensors, the system provides real-time monitoring with an instant response to fraudulent transactions. The ATM is also equipped with cardless transaction capability via mobile apps and QR code scanning, minimizing card skimming, cloning, and PIN capture threats. The feature provides security with a more convenient and seamless banking experience. To make the Smart Vision Secure ATM more accessible, it has a user-friendly interface with touch controls, voice assistance, and multilin

No. of Pages : 8 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025

(21) Application No.202541027642 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “Energy Efficiency and Battery Life in IoT Devices”

(51) International classification	:H04W0052020000, H04W0004700000, H04L0067120000, H02J0050200000, G06Q0010063700
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The rapid proliferation of the Internet of Things (IoT) has already brought drastic alterations regarding different aspects of industries; however, sustainability and energy efficiency remain the key challenges in terms of functionality for IoT devices. This paper delves into the methods that optimize power consumption in these devices to improve battery life and achieve sustainable deployment. The study, through careful dissection of the current energy management model, energy depletion issues, and possible energy-saving suggestions, distinctly defines a few areas that require amelioration. Solutions that tackle the issue include the use of adaptive power management, duty cycle optimization, and the introduction of low-functioning communication protocols. This work establishes a framework for the resilience and sustainability improvement for the IoT devices within energy-constrained environments and generates insights into futuristic strategies for IoT deployment.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027643 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “Solar Panel Tracker System Using STM32F407G Microcontroller”

(51) International classification :H02S0020320000, F24S0050200000, G01S0003786000, F24S0030425000, H02S0020300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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(57) Abstract :
The "Solar Panel Tracker System using STM32F407G” is an innovative solution designed to maximize solar energy collection by dynamically adjusting the orientation of a solar panel to follow the sun's position throughout the day. This system leverages Light Dependent Resistor (LDR) sensors to detect the optimal sunlight direction and employs a servo motor to reposition the solar panel accordingly. The ARM Cortex-M4 processor-based STM32F407G microcontroller serves as the core of the system, chosen for its high performance, speed, and versatile pin configuration capabilities. The LDR sensors provide real-time data on sunlight intensity, which the microcontroller processes to determine the optimal angle for the solar panel. The servo motor, controlled by the STM32F407G, adjusts the panel's position to ensure it is always oriented towards the brightest light source. By continuously optimizing the panel's position, this system significantly enhances energy collection efficiency compared to stationary solar panels.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027644 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “Design and Evaluation of a Modified Manual Machine for Keyway Slotting and Gear cutting”

(51) International classification :B26D0007260000, B31B0050220000, B23F0023120000, F16D0001080000, G06Q0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This project, "Design and Development of Manual Keyway Slotter and Gear Cutting Machine," aims to design, develop, and build a versatile machine that can perform both keyway slotting and gear cutting operations. These operations are essential in mechanical engineering for creating slots and gears in machine components for a tight fit and smooth movement. The project involves the selection of appropriate materials, the design of the machine's components, and the assembly of the final product. The machine's key components include a reciprocating mechanism for the keyway slotter and a rotary mechanism for the gear cutting operation. The machine's design ensures precise and accurate cuts for both keyways and gears. The project's outcome is a high-quality and reliable machine that is easy to operate and maintain. The machine's user-friendly interface and ergonomic design make it suitable for use in mechanical engineering workshops, research labs, and educational institutions. The machine's versatility and compact

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027653 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Integrating Advanced Technology for Remote Healthcare: The Smart Medical Recliner

(51) International classification :G16H0010600000, G16H0040670000, G16H0080000000, A61B0034300000, G16H0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This paper introduces a novel smart medical recliner designed to revolutionize remote healthcare delivery. The recliner is equipped with advanced features that facilitate preliminary medical tests, enabling patients to receive timely and accurate diagnoses without the need for in-person consultations. A high-resolution camera and LED display are integrated to provide clear, full-body visual communication with doctors, both domestically and internationally, according to the patient's preference. The system incorporates real-time language translation capabilities to ensure seamless communication between patients and doctors, regardless of linguistic barriers. The recliner's capabilities extend to facilitating blood sample collection and analysis using AI-driven robotic surgery methods. Both preliminary and blood test results are accessible to both the doctor and patient, allowing for informed decision-making. Based on the test outcomes, doctors can prescribe medications, which are then displayed to the patient in QR code format. This QR code can be scanned by a medical vending machine, which dispenses the prescribed medication accurately. Additionally, the patient's full medical history is stored on a smart medical card, which can be shared with other healthcare providers as needed. This innovative solution aims to enhance the efficiency and accessibility of healthcare services, particularly for patients in remote or underserved areas. By leveraging cutting-edge technology, the smart medical recliner offers a comprehensive and integrated approach to remote diagnosis, treatment, and medication dispensing, ultimately improving patient outcomes and healthcare delivery.

No. of Pages : 9 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027656 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A wearable device with an intelligent assistant and support system

(51) International classification :A61B5/24, G16H50/20, G16H50/30, G16H80/00, H04W4/02, G08B21/00, H04L67/12

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[0050] The invention provides a wearable device with an intelligent assistance and support system that is utilized by Alzheimer patients and their respective caregivers/family members. The device comprises of a sensing and detection unit that collects various physical data to provide insights about the status of the patients, a dual communication unit, a communication module for both online and offline communication, a haptic unit to provide alerts and reminders, a processing unit hosting a software module that is configured with plurality of AI-based adaptive algorithms and a customizable UI/UX interface with easy navigation, voice assistance integration, push notification, and SOS feature. The associated collaborative digital platform including a support and coordination hub with several navigation features further including a digital memory book/journal, physical and mental status tracker, alerts/reminders and task allocator. The algorithms analyse and interpret the current patient state and activates personalized reminders/alerts for cognitive and emergency support.

No. of Pages : 25 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027676 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM OF SELECTIVE BINARIZATION OF DEEP NEURAL NETWORKS

(51) International classification :G06N3/045, G06N20/00, G06N3/08, G06F18/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT METHOD AND SYSTEM OF SELECTIVE BINARIZATION OF DEEP NEURAL NETWORKS The present subject matter provides a constraint-aware architecture design methodology for selective binarization of DNNs, aiming to enable their efficient implementation on resource-constrained hardware platforms. The methodology addresses the limitations of traditional DNN design approaches by explicitly considering hardware constraints and application requirements during the design process. Figure 3a and 3b

No. of Pages : 28 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027750 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMOBILE INTEGRATED EXHAUST HEAT RECOVERY SYSTEM AND METHOD FOR OPERATING SYSTEM

(51) International classification :F01N0005020000, F28D0021000000, F02G0005020000, F28F0003020000, F01K0023100000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed is an exhaust heat recovery system (100) and method (800). The system comprises a heat exchanger (200) that is coupled with coolant tanks (202a, 202b) and integrated with a valve assembly (300). The system circulates coolant around heat transfer channels to absorb thermal energy from exhaust gases. The valve assembly (300) is configured to regulate the exhaust gas flow rate based on engine operating conditions and desired heat recovery output. The heat exchanger (200) comprises air fins (204) disposed on the plate tubes (206), where coolant flows through the plate tubes (206) and exhaust gases flow through the air fins (204) in a counter-cross flow configuration respectively. The valve assembly (300) includes valve plates (308a-308b) operable in two conditions for regulating exhaust gas flow. The system provides approximately 60% effectiveness in coolant gain and exhibits a low coolant pressure drop to enhance thermal efficiency. Figure 1A will be the reference.

No. of Pages : 30 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541027885 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WHEELCHAIR-MOUNTED ROBOTIC END EFFECTOR WITH ADJUSTABLE ARM SUPPORT FOR UPPER LIMB REHABILITATION

(51) International classification	:A61H0001020000, A63B0023120000, A63B0071000000, A63B0071060000, A63B0024000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention introduces a wheelchair-mounted robotic end-effector with an adjustable arm support mechanism, designed to enhance upper limb rehabilitation for individuals with mobility impairments. This innovative system seamlessly integrates with a wheelchair, ensuring continuous rehabilitation therapy in both clinical and home settings. The device features an ergonomically adjustable arm support mechanism, allowing customized positioning to accommodate users with varying levels of mobility and therapeutic needs. The robotic end-effector is equipped with an adjustable arm support mechanism, allowing customized positioning based on the user's range of motion and rehabilitation needs. The system incorporates a servo-actuated rotating link, enabling precise placement of the manipulator to the left or right side of the patient for targeted therapeutic exercises. The robotic arm dynamically adapts to the patient's movements, providing adaptive resistance and assistance based on real-time feedback from integrated force, position, and motion sensors. To enhance usability, the wheelchair-mounted system is lightweight, mobile, and ergonomically optimized, ensuring effortless positioning and reconfiguration for different patient needs. Mobility and flexibility are further enhanced through a stable yet maneuverable base, allowing effortless positioning of the robotic end-effector relative to the wheelchair user. This invention aims to improve motor coordination, muscle strength, and functional recovery, offering an advanced, accessible, and user-friendly solution for upper limb rehabilitation in wheelchair-bound individuals.

No. of Pages : 18 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027886 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED SYSTEM FOR GENERATING DRUG LIKE MOLECULES AND METHOD THEREOF

(51) International classification	:G16C0020500000, G16C0020700000, G06T0007000000, H02J0003320000, G16H0070400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT ARTIFICIAL INTELLIGENCE-BASED SYSTEM FOR GENERATING DRUG LIKE MOLECULES AND METHOD THEREOF The present invention discloses an artificial intelligence-based (AI-based) system for generating drug like molecules and an artificial intelligence-based (AI-based) method thereof. The AI-based system (102) obtains biological target data and therapeutic information. The AI-based system (102) generates molecular structures. The AI-based system (102) evaluates the generated molecular structures for binding affinity, pharmacological relevance, and structural validity to compute a multi-parametric scoring. The AI-based system (102) predicts properties of the evaluated molecular structures. The AI-based system (102) determines feasible synthesis pathways for the selected molecular structures. The AI-based system (102) optimises the molecular structures for generating the drug like molecules with validated synthetic feasibility and drug-like properties. Figure 1

No. of Pages : 57 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541027916 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR ANALYZING GAIT VARIATIONS AND KNEE OSTEOARTHRITIS (KOA) PATIENTS AND A METHOD THEREOF

(51) International classification	:A61B0005000000, A61B0005110000, G06N0020000000, G16H0040670000, G16H0050200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
ABSTRACT A SYSTEM FOR ANALYZING GAIT VARIATIONS AND KNEE OSTEOARTHRITIS (KOA) PATIENTS AND A METHOD THEREOF The present disclosure is a multi-sensor system (100) for analyzing gait variations in healthy individuals and knee osteoarthritis (KOA) patients. The system (100) integrates IMU sensors (102), microcontrollers (104), wireless communication (106), cloud computing (108), location sensing (112), and alert modules (114). IMU sensors (102) capture motion data, which is preprocessed by microcontrollers (104) and transmitted wirelessly to a cloud computing module for KOA severity classification using machine learning. A location sensing module (112) tracks patients in real time, while an alert module (114) notifies caregivers of abnormal gait patterns. The system (100) also features a user interface for real-time analysis and historical trend visualization. By combining high-frequency motion tracking, machine learning-based classification, and predictive analytics, this system enhances KOA diagnosis, enables remote monitoring, and facilitates timely medical intervention for improved patient care.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025

(21) Application No.202541027967 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MODULAR PLATFORM FOR THREE-WHEELER CARGO AND QUADRICYCLE VEHICLES

(51) International classification	:B60K0001040000, B62K0005000000, B60P0007080000, G06Q0010080000, B62D0061060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
attached

No. of Pages : 21 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028030 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : An Input device for Interfacing with An Electronic Device

(51) International classification :G06F3/01, G06F3/023, G06F3/038, G06F1/16

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract Title: An Input device for Interfacing with An Electronic Device The present invention relates to an input device (100) for interfacing with an electronic device (200). The input device (100) includes a housing (10), a touch display (40), at least one sensor (50), and a processing unit (60). The touch display (40) is arranged on a portion of the housing (10), configured to display a keyboard and receive touch input from the user. The sensor (50) is adapted to detect the position of one or more fingers of the user relative to the touch display (40) for showing the position of the fingers on a screen (210) of the electronic device (200). Specifically, the processing unit (60) is configured to determine the position of the finger aligning with a key displayed on the touch display (40), and upon detecting the touch input corresponding to the position of the key, transmits an input signal to the electronic device (200). FIG. 1

No. of Pages : 29 No. of Claims : 17

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028048 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR GESTURE CONTROLLED SHOPPING CART

(51) International classification :B62B3/14, B62B5/00, B25J9/16, G06Q10/08, B25J5/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
A system 100 for a shopping cart used in retail store can include a camera 102 to capture real time gestures of a user; a plurality of sensors 106 to detect obstacles within the field of movement of the cart; and a microcontroller 104 in communication with the camera102 and the sensors 106 within a network. The microcontroller 104 can perform operations to capture gestures of the user using camera 102 to control movement of cart; detect obstacles, using sensors 106 to maintain obstacles free movement as per the gesture control of user; activate a servo motor 108 integrated with the cart to steer cart autonomously in intended directions based on user gestures; activate a DC motor 110 to move cart forward and backward; and generate real-time audio feedback intimating directional changes to user through an audio feedback module 114.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028049 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR MONITORING COOLANT IN REFRIGERATION UNITS

(51) International classification	:G06F0011070000, H04L0009400000, A61B0005080000, A61B0005020500, A61B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A system 100 to monitor coolant in a refrigeration unit can include a plurality of sensors 102 configured to sense real-time data of coolant; a server 104 in communication with the plurality of sensors 102, in a network 120. The server 104 including a plurality of modules, one or more processors to perform operations to collect real-time data of the coolant through the plurality of sensors 102; analyse each data collected to calculate specific parameter of the coolant with their predefined level; detect anomaly, if any in one or more parameters to notify user 108 on a display; resolve anomaly detected in one or more parameters of the coolant applying maintenance measures; and notify user 108 to use the refrigerant unit after successful resolution of maintenance measures. A display unit 106 display real-time data obtained using sensors 102 and notify anomaly detected to the user 108.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028050 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR DETECTING MENTAL HEALTH CONDITIONS BY ANALYZING REAL-TIME USER DATA

(51) International classification :A61B5/00, G16H50/20, G16H50/30, G06N20/00, G06N3/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to a system (100) for detecting mental health conditions by analyzing real-time user data. The system (100) can include a camera unit (102) with thermal and infrared imaging sensors (102-1) to capture gait data and detect facial expressions for emotional state assessment. A smart mat (104) with capacitive or piezoelectric pressure sensors (104-1) detects weight distribution changes, measuring respiration rate, breathing amplitude, and heart rate variability (HRV). Processors (104-2) and memory (104-3) execute instructions to receive real-time user data, compare data against a pre-stored dataset using machine learning, and identify deviations such as irregular breathing, reduced HRV, abnormal gait, and facial expressions indicating distress. The processors (104-2) determine the severity of detected conditions exceeding predefined safety thresholds, generate real-time alerts, and transmit alerts to a computing device (108) over a network (112) for timely intervention, where detected conditions include high stress, depressive symptoms, and suicidal tendencies.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028130 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Driven Cybersecurity Threat Predictor

(51) International classification :G06N20/00, G06F21/55, G06F21/57, G06N3/08, G06N20/20

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention discloses an AI-Driven Cybersecurity Threat Predictor that leverages machine learning (ML) and metaheuristic algorithms to proactively detect, predict, and mitigate cyber threats. The system integrates real-time threat intelligence feeds, automated response mechanisms, and a scalable architecture to provide a robust and adaptive cybersecurity solution. Metaheuristic algorithms, such as Genetic Algorithms (GA) and Particle Swarm Optimization (PSO), are employed to optimize machine learning models, enhance feature selection, and improve anomaly detection. The system is designed to be scalable and adaptable across various industries, including healthcare, finance, and critical infrastructure. By combining advanced AI techniques with metaheuristic optimization, the invention offers a proactive approach to cybersecurity, enabling organizations to predict and prevent threats before they occur, thereby reducing risks and enhancing overall security posture

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028132 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN IMPROVED PROCESS FOR THE PREPARATION OF 2-[(4-BROMOPHENYL)(METHOXY)METHYLENE]MALONONITRILE

(51) International classification	:C07D487/04, A61K31/519, A61P19/02, A61P29/00, A61P35/00
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
An improved process for the process of the preparation of 2-[(4 bromophenyl)(methoxy)methylene]malononitrile compound of Formula I, which comprises of, chlorination of 5-bromobenzoic acid compound of Formula IV With oxalyl chloride in the presence of a dichloromethane to give in-situ compound of 5-bromobenzoyl chloride compound of Formula III which upon nucleophilic addition with malononitrile in the presence of a base and tetrahydrofuran to give 2-[(4-Bromophenyl)(hydroxy)methylene]malononitrile compound of Formula (II) which on methylation by using dimethyl sulphate in the presence of sodium carbonate and 1,4-Dioxane to give 2-[(4-Bromophenyl)(methoxy)methylene]malononitrile compound of Formula-I and optionally purifying the compound to obtain high pure compound of Formula (I).

No. of Pages : 18 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :25/03/2025

(21) Application No.202541028158 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN INTELLIGENT NEURAL NETWORK-BASED URBAN TRAFFIC MANAGEMENT SYSTEM

(51) International classification :G08G0001080000, G08G0001010000, H04W0028020000, G06N0003080000, H04L0047700000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an intelligent neural network-based urban traffic management system comprising IoT-enabled sensors (101), actuators (102), a neural network module (103), and a traffic signal control unit (104). It utilizes reinforcement learning (105), edge computing (106), cloud server (107), V2I (108), V2V (109), block-chain security (110), a hybrid optimization module (111), a mobile application (112), and a dashboard (113) to dynamically optimize traffic flow, enhance safety, and reduce congestion.

No. of Pages : 26 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028172 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Intelligent Tutoring System for Computer Education with Natural Language Processing

(51) International classification :G06Q50/20, G06N20/00, G09B19/06, G06F40/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The patent "Intelligent Tutoring System for Computer Education with Natural Language Processing" introduces a ground breaking approach to computer education. In response to the challenges faced by traditional teaching methods in computer science, this system leverages advanced natural language processing techniques to provide personalized instruction. Its core components include sophisticated algorithms for understanding student queries and responses, a comprehensive knowledge base comprising educational materials, and adaptive learning mechanisms tailored to individual learning styles and pace. Through a user-friendly interface, students interact with the system using natural language, receiving real-time feedback on their progress and performance. One of the key advantages of this system is its ability to enhance learning outcomes by delivering personalized instruction that caters to the unique needs of each student. By adapting the curriculum to match the student's proficiency level and learning preferences, it fosters deeper understanding and retention of computer science concepts. Furthermore, the system's accessibility makes quality computer education available to a wide audience, overcoming geographical barriers and time constraints. Its scalability and cost-effectiveness make it an attractive solution for educational institutions, online learning platforms, corporate training programs, and specialized training initiatives. The implementation of this intelligent tutoring system encompasses a robust technical architecture, including algorithms for natural language processing, adaptive learning, and knowledge representation. It can be seamlessly integrated into existing learning management systems or deployed as a standalone solution. Its potential applications span across various domains, from educational institutions integrating it into their curricula to corporations providing tailored computer education for their employees. Overall, this patent outlines a revolutionary approach to computer education, promising to reshape how individuals learn and engage with computer science concepts in the digital age.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028192 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Privacy-Preserving Auditing Mechanism for Cloud Computing Services

(51) International classification :H04L0009000000, H04L0009320000, H04L0009400000, H04L0009080000, G06F0021640000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed invention introduces a Privacy-Preserving Auditing Mechanism for Cloud Computing Services, focusing on secure data integrity verification without compromising confidentiality. Utilizing advanced cryptographic techniques such as homomorphic encryption, bilinear pairing, and zero-knowledge proofs, the system enables third-party auditors to perform integrity checks without accessing sensitive information. The mechanism incorporates batch auditing and probabilistic sampling for scalability, ensuring efficiency even in large-scale cloud environments. Additionally, blockchain integration provides immutable and transparent audit logs, enhancing trust and accountability. The system is designed to resist security threats, including replay attacks and malicious collusion, while remaining adaptable to multi-cloud and hybrid architectures. Its applicability in healthcare, finance, and government sectors ensures compliance with regulatory standards. By combining security, efficiency, and privacy, this invention offers a robust solution for maintaining data integrity and trust in cloud computing services.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028195 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : QENERGYMAP SMART QUANTUM BATTERY DESIGN

(51) International classification :H02J0013000000, H01M0004020000, H01M0010480000, H02J0007000000, G06Q0050060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The QENERGYMAP Smart Quantum Battery represents a groundbreaking advancement in energy storage technology, combining quantum principles and artificial intelligence to enhance energy efficiency, density, and overall battery performance. This innovative design leverages quantum mechanics, including superposition and entanglement, to optimize energy transfer, minimize power losses, and increase energy retention. By integrating AI-based smart monitoring, the battery system enables real-time tracking, predictive maintenance, and dynamic load balancing, improving its operational efficiency and extending its lifespan. One of the key features of the QENERGYMAP design is its rapid charging capability, allowing for faster and safer energy replenishment while minimizing overheating risks. Additionally, quantum-enabled thermal regulation mechanisms ensure consistent heat dissipation to maintain optimal performance under varying conditions. The battery architecture is engineered to provide enhanced energy density, allowing for higher energy storage capacity in a compact form, making it suitable for diverse applications such as electric vehicles, portable electronics, renewable energy systems, and industrial machinery. This quantum-smart battery also incorporates sustainable and quantum-compatible materials, reducing its environmental impact and enhancing recyclability. The integration of AI-driven fault detection and self-repair mechanisms ensures system reliability and resilience, while advanced quantum cryptography-based security features safeguard data integrity and prevent unauthorized access. The QENERGYMAP Smart Quantum Battery Design redefines the future of energy storage by delivering superior performance, efficiency, and sustainability. It addresses the growing demand for high-capacity, smart, and eco-friendly energy solutions, positioning itself as a transformative technology in the energy sector.

No. of Pages : 5 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028196 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART CLOUD RESOURCE ALLOCATION AND DYNAMIC LOAD BALANCING SYSTEM USING DEEP LEARNING TECHNIQUES

(51) International classification :G06F0009500000, H04L0041147000, H04L0041089600, G06F0009455000, H04L0067101000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[031] The present invention discloses a smart cloud resource allocation and load balancing system utilizing deep learning to optimize cloud infrastructure performance. The system comprises a data collection module that gathers real-time performance metrics, a preprocessing module that prepares the data for analysis, and a deep learning module that predicts workload demands. Based on these predictions, a resource allocation engine dynamically provisions virtual machines, storage, and bandwidth, while a load balancing engine distributes incoming traffic across cloud nodes to prevent bottlenecks. A continuous feedback mechanism refines the model over time, enhancing accuracy and adaptability. This system ensures optimal resource utilization, reduces latency, and improves cloud scalability, making it ideal for handling dynamic workloads in modern cloud environments. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028204 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE E-LEARNING SYSTEM FOR LEADERSHIP AND ORGANIZATIONAL BEHAVIOR TRAINING

(51) International classification :G06N 20/00, G06Q 10/06, G06Q 10/105
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The proposed Adaptive E-Learning System for Leadership and Organizational Behavior Training is an intelligent platform designed to enhance leadership skills and organizational behavior competencies in professional environments. By integrating artificial intelligence (AI), machine learning, and adaptive learning methodologies, the system personalizes training based on individual performance, engagement, and learning pace. It incorporates interactive simulations, gamification, and sentiment analysis to improve decision-making, emotional intelligence, and team management skills. The system provides real-time feedback, data-driven insights, and predictive analytics for identifying skill gaps and optimizing training outcomes. Cloud-based accessibility ensures flexible learning across devices, supporting remote and hybrid work models. With robust security measures and adherence to ethical AI principles, the system ensures data privacy and fairness. This invention addresses the limitations of traditional corporate training by offering a scalable, engaging, and personalized learning experience that fosters continuous professional development and organizational success.

No. of Pages : 21 No. of Claims : 10

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(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028207 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Machine Learning-Based Flood Prediction and Mitigation System

(51) International classification :G06F18/10, G06F30/27, G06Q50/26
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention discloses a machine learning-based flood prediction and mitigation system designed to enhance disaster preparedness and response. The system collects real-time data from IoT-based sensors, weather stations, and satellite imagery, integrating them with historical flood data to improve forecasting accuracy. Machine learning models, including deep learning techniques, analyze multiple environmental parameters to predict flood risks with high precision. The system employs a multi-layered predictive analytics engine that processes large datasets, applies feature extraction techniques, and generates risk assessments. A real-time alert system provides early warnings to authorities and the public through mobile applications, web dashboards, and automated messaging systems. Additionally, the system integrates Geographic Information Systems (GIS) for visualizing flood-prone areas and enabling strategic decision-making. To enhance mitigation efforts, the system offers actionable recommendations for resource allocation, evacuation planning, and emergency response coordination. A cloud-based platform ensures remote monitoring, real-time updates, and continuous learning capabilities, allowing adaptive improvements in flood prediction accuracy. By leveraging artificial intelligence and big data analytics, the invention minimizes the impact of floods on human lives and infrastructure, ultimately contributing to effective disaster management and resilience building.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028208 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Self-Powered IoT Sensors for Continuous Structural Damage Detection

(51) International classification :G01M0005000000, G01N0029040000, H04W0004380000, H04Q0009000000, G01N0029140000
(86) International Application No :NA
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention provides a self-powered Internet of Things (IoT) sensor system specifically designed for continuous structural damage detection and monitoring in critical infrastructure, such as bridges, buildings, dams, and other large-scale structures. The invention integrates innovative energy-harvesting technologies, such as piezoelectric and thermoelectric devices, to generate electrical energy from ambient mechanical vibrations and temperature gradients present in the environment. This energy is efficiently captured and converted to power the IoT sensors autonomously, removing the need for external power sources or frequent battery replacements, making it particularly suitable for remote or hard-to-reach locations. The IoT sensor system comprises a suite of damage detection mechanisms, including strain gauges, accelerometers, displacement sensors, and microcrack detectors, which work together to continuously monitor structural integrity. These sensors detect various forms of damage such as microcracks, strains, displacement, and vibrations that indicate deterioration or structural failure. The sensor data is wirelessly transmitted to a central server, cloud-based platform, or a dedicated monitoring system via low-power, long-range communication protocols such as LoRaWAN, Zigbee, or Narrowband IoT (NB-IoT), allowing for real-time transmission of data from remote locations. The self-powered nature of the sensor system ensures its operation over extended periods, which is particularly beneficial in large-scale infrastructure monitoring applications where traditional power solutions may be impractical or costly. The system's integration of low-power communication protocols allows for extended battery life and reduced operational costs, while ensuring that high-quality data is continuously available for analysis. The invention addresses key challenges in the structural health monitoring field by providing a sustainable, autonomous, and cost-effective solution for detecting damage in real-time, allowing for early intervention and preventive maintenance. The system enhances the safety and reliability of critical infrastructure by identifying potential issues before they become catastrophic, reducing the need for manual inspections, and extending the operational life of infrastructure. Moreover, the invention provides an eco-friendly alternative by utilizing harvested energy, thereby reducing reliance on traditional power sources and batteries. In summary, this self-powered IoT sensor system offers a scalable, efficient, and environmentally friendly solution for continuous, real-time structural health monitoring, improving both the safety and longevity of infrastructure across a variety of applications.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028209 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Convolution Neural Network with Deep Learning for Content-Based Image Retrieval

(51) International classification :G06F0016583000, G06N0003045000, G06N0003080000, G06V0010820000, G06V0010440000
(86) International Application No :NA
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a method and system for Content-Based Image Retrieval (CBIR), utilizing Convolutional Neural Networks (CNNs) with deep learning techniques to significantly improve the accuracy, efficiency, and scalability of image search systems. Traditional CBIR methods rely on manually designed low-level features such as color, texture, and shape to index and retrieve images, which can be limited in their ability to capture complex visual content. In contrast, the method proposed by this invention automates feature extraction through a CNN, allowing the system to learn high-level, hierarchical features from raw image data. These features are then represented as high-dimensional vectors that capture the essential visual content of the images. The system stores these feature vectors in an indexing database, where they can be quickly compared to the feature vector of a query image using similarity measures like cosine similarity or Euclidean distance. The most visually similar images are then retrieved and ranked according to relevance. This deep learning-based approach not only improves the accuracy of retrieval, but also offers robustness to variations in image scale, rotation, and noise, which traditional methods struggle with. Additionally, the system can efficiently handle large-scale image databases, making it suitable for real-time or near-real-time image retrieval applications across various domains, such as e-commerce, medical imaging, security and surveillance, and digital archives. The invention reduces the need for manual feature engineering, enhances retrieval precision, and optimizes computational performance, providing a more scalable and efficient solution for image search tasks. By leveraging the power of deep learning, particularly CNNs, this invention advances the state of CBIR technology, enabling more intelligent and contextually accurate image retrieval in modern, data-rich environments.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
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(21) Application No.202541028210 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Secure Sharing of Identity for KYC (Know Your Customer)

(51) International classification :G06F 21/32, G06F 21/60, G06F 21/64
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to a system and method for secure sharing of identity information for Know Your Customer (KYC) processes, aimed at enhancing the security, privacy, and efficiency of identity verification while complying with regulatory requirements. The invention addresses the increasing need for secure digital identity management in the financial, banking, and other regulated sectors, providing a mechanism that protects sensitive personal data and ensures compliance with local and global privacy laws. The invention utilizes a combination of advanced cryptographic techniques, including encryption, tokenization, and blockchain technology, to securely store and transmit personal identity data. The system integrates biometric authentication, such as fingerprint scanning or facial recognition, to establish the identity of the user, ensuring that only authorized individuals can share and access sensitive information. The use of multi-factor authentication (MFA) enhances the security of the process, adding an additional layer of verification. In the proposed system, tokenization is employed to convert sensitive data, such as personal identification numbers (PINs), social security numbers, and other private details, into unique tokens. These tokens are used during the KYC verification process, ensuring that the actual sensitive information is not exposed or transmitted, thus reducing the risk of data breaches or identity theft. The blockchain-based decentralized architecture ensures the integrity and immutability of the verification process, providing a transparent record that cannot be altered or tampered with. This feature enhances the trustworthiness of the system, as all actions performed during the KYC verification, such as data submission, approval, or rejection, are recorded on the blockchain. The result is a tamper-proof, auditable trail that ensures data integrity and compliance with relevant regulations. The invention also incorporates the use of smart contracts within the blockchain to automatically validate and execute KYC compliance procedures, reducing the need for manual intervention and minimizing the risk of errors or fraud. Smart contracts ensure that data is validated only when specific conditions are met, ensuring that identity verification is done according to predefined standards and requirements. Additionally, the system is designed to be scalable, allowing it to cater to a wide range of industries, including banking, financial services, healthcare, e-commerce, and others that require secure and efficient identity verification. The system allows institutions to quickly and securely verify identities in real-time, enabling faster customer onboarding and reducing the time and cost associated with manual KYC checks. By leveraging these technologies, the invention offers an efficient, secure, and user-friendly solution for identity verification that addresses the growing concerns over data privacy, identity fraud, and compliance with global data protection regulations such as GDPR and CCPA. The system’s ability to provide end-to-end encryption ensures that all data is protected during the sharing process, making it resistant to unauthorized access, cyberattacks, and other malicious activities. In summary, the invention provides a comprehensive and secure framework for managing and sharing identity data, enabling secure KYC processes that balance privacy, security, and regulatory compliance, all while improving the customer experience and reducing operational costs for institutions.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028211 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Deep Learning-Based Intelligent Cyber security for Zero-Day Attack Prevention

(51) International classification :G06N3/02, G06N3/045
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides an intelligent cyber security system designed to detect and prevent zero-day attacks using deep learning and artificial intelligence (AI) techniques. Unlike traditional signature-based systems, which rely on pre-defined attack patterns, the system utilizes advanced neural networks, including convolutional neural networks (CNNs) and recurrent neural networks (RNNs), to analyze data from multiple sources, such as network traffic, system logs, and user behavior. By continuously monitoring these data sources in real-time, the system identifies anomalous behaviors and unknown vulnerabilities indicative of zero-day attacks, enabling rapid and accurate threat detection. The deep learning model at the core of the invention is trained on a large dataset of historical data and new attack patterns, allowing it to adapt and refine its detection capabilities over time. This adaptive learning ability ensures that the system is able to detect previously unseen attack vectors, keeping it effective against emerging and evolving threats. The system operates in real-time, providing immediate responses to identified threats. When a zero-day attack is detected, the system automatically initiates an appropriate response, such as isolating the affected system, blocking malicious traffic, or notifying security administrators, thereby preventing the attack from causing significant damage. A key feature of the invention is its scalability, making it suitable for implementation across a range of network environments, from small-scale businesses to large enterprise infrastructures. The system is designed to integrate seamlessly with existing cyber security frameworks, enhancing their ability to protect against zero-day vulnerabilities without requiring substantial changes to the underlying infrastructure. This ensures a more cost-effective and efficient approach to defending against sophisticated and unknown threats. By leveraging deep learning techniques, the system not only detects and prevents known threats but also provides a predictive defense mechanism that anticipates potential attack vectors. This proactive defense approach provides organizations with enhanced resilience against cyber threats and improves the overall cyber security posture. In conclusion, the invention represents a next-generation cyber security solution that offers an intelligent, adaptive, and automated defense against zero-day attacks, ensuring more comprehensive and effective protection for digital assets and critical infrastructure.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028213 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN INTELLIGENT CAREGIVER ASSISTANCE AND PATIENT MANAGEMENT SYSTEM FOR ADVANCED PARKINSON'S DISEASE

(51) International classification :A61B0005000000, G16H0040200000, G16H0050200000, G16H0040670000, G16H0010600000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT AN INTELLIGENT CAREGIVER ASSISTANCE AND PATIENT MANAGEMENT SYSTEM FOR ADVANCED PARKINSON'S DISEASE The present invention relates to a smart caregiver guidance system designed to assist in the management and care of late-stage Parkinson's disease patients. The system integrates training modules, real-time feedback mechanisms, personalized care plans, and progress tracking tools to enhance caregiver competence and reduce stress. It features adaptive exercise protocols, goal-setting engagement tools, and multilingual user interfaces to ensure accessibility and ease of use. By leveraging data-driven monitoring and AI-powered recommendations, the system continuously adjusts patient care routines to optimize symptom management and improve patient outcomes. Additionally, the system includes a community support feature for caregivers, providing expert resources and peer collaboration opportunities. The invention aims to enhance caregiving efficiency, improve patient well-being, and reduce caregiver burnout by offering a structured, technology-driven approach to Parkinson's disease management.

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028214 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : System and Method for Cloud Kitchen Integration to provide affordable meal kits

(51) International classification :G16H20/60, G06Q50/12, G06Q10/08, G06Q10/06
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Indian students pursuing master's degrees abroad often face difficulties in maintaining a nutritious and balanced diet due to time constraints, unfamiliarity with local ingredients, and limited access to affordable cooking solutions. These challenges lead to unhealthy eating habits, increased stress, and a decline in overall well-being. This study proposes an innovative cloud kitchen-based meal kit system that leverages technology to provide students with convenient, affordable, and nutritious Indian meal options. The solution integrates AI-driven meal recommendations, pre-portioned ingredients, and smart delivery logistics to ensure easy access to home-style meals. Additionally, eco-friendly packaging and sustainable practices are incorporated to minimize environmental impact. By addressing key dietary challenges, this approach enhances students' health, academic performance, and overall quality of life while living abroad.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :25/03/2025
(21) Application No.202541028219 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A System to Detect Botnet Attacks and Identifying Malicious Intrusions in Real-Time

(51) International classification :G06N 3/02, G06N 3/045
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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(57) Abstract :
The present invention relates to a supervised learning-based method for detecting and defending against botnet attacks in IoT-enabled cybersecurity infrastructures. By utilizing Convolutional Neural Networks (CNNs), the method extracts key features from network traffic data to identify and classify botnet activity. The process includes acquiring and pre-processing a dataset of network transactions, followed by feature extraction and optimization. The classifier is trained to detect malicious intrusions and mitigate attacks in real-time. The invention introduces a novel approach for discovering time frame thresholds, which enhances the detection accuracy by optimizing the classification process. This solution offers a scalable, adaptive, and efficient method for safeguarding IoT networks from botnet intrusions.

No. of Pages : 27 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028222 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : An AI-Driven Deep Learning Framework for Early Detection of Lung Cancer Using Advanced Machine Learning Techniques

(51) International classification	:G06T0007000000, G16H0050200000, G06N0005045000, A61B0005000000, G16H0010600000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention discloses an AI-driven deep learning framework for early detection of lung cancer using advanced machine learning techniques. The system processes medical images, extracts relevant features, and classifies lung nodules as benign or malignant. By integrating deep learning with explainability methods, the framework enhances diagnostic accuracy and transparency. The invention provides a scalable and efficient solution for automated lung cancer detection, supporting early intervention and improved patient outcomes

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028225 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Impact of Road Geometry on Traffic Flow Characteristics A Case Study

(51) International classification :G08G0001010000, G08G0001080000, G06F0030130000, G06F0030200000, G06Q0010060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a systematic and comprehensive analysis of the impact of road geometry on traffic flow characteristics. It introduces an innovative methodology that integrates real-time data collection, statistical analysis, and predictive modeling to evaluate the influence of geometric features such as lane width, road curvature, gradient, intersection design, and median placement on vehicular movement and congestion levels. The study aims to quantify the relationship between road design and traffic efficiency by leveraging GPS tracking, sensor-based monitoring, and video surveillance. By assessing critical traffic parameters, including speed, density, headway, and flow rate, the invention provides actionable insights for optimizing road infrastructure. The developed predictive models assist in designing safer, more efficient roadways, reducing congestion, improving road safety, and minimizing environmental impact by lowering fuel consumption and emissions. The study also evaluates accident-prone areas associated with specific road geometric conditions and proposes remedial measures to enhance transportation safety. This invention serves as a valuable tool for urban planners, policymakers, and traffic engineers in making data-driven decisions for improving road networks. Its findings contribute to the sustainable development of transportation infrastructure, ensuring smoother traffic flow and enhanced mobility. The proposed framework is tested on real-world case study locations to validate its effectiveness, demonstrating its potential in revolutionizing road design and traffic management strategies.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028227 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT-Enabled Deep Learning System for Enhancing Personalized Healthcare and Optimizing Hospital Resource Management

(51) International classification :G16H10/60, G06N3/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
IoT-Enabled Deep Learning System for Enhancing Personalized Healthcare and Optimizing Hospital Resource Management 1. ABSTRACT The Internet of Things (IoT)-enabled deep learning system is revolutionizing personalized healthcare and optimizing hospital resource management. By integrating IoT devices with deep learning algorithms, the system collects real-time patient data from wearable sensors, medical devices, and environmental sensors. This data is then processed to provide accurate and personalized health assessments, predictive analytics, and decision support for clinicians. The deep learning models are trained to detect patterns in patient health data, enabling early diagnosis, treatment personalization, and continuous monitoring. In parallel, the system also improves hospital resource management by tracking equipment usage, bed occupancy, and staff allocation. It offers insights into hospital workflow, predicting resource shortages and enabling more efficient scheduling. IoT-enabled devices ensure real-time updates on resource availability, minimizing downtime and improving hospital operational efficiency. The integration of IoT and deep learning enhances both clinical outcomes and administrative processes, leading to a more effective healthcare delivery system. The system's scalability allows for deployment across multiple healthcare settings, providing a foundation for smarter, data-driven healthcare management in both hospitals and outpatient facilities. Overall, this IoT-deep learning fusion fosters a patient-centered, efficient, and resource-optimized healthcare environment. Keywords: IoT (Internet of Things),Deep Learning,Personalized Healthcare,Predictive Analytics,Hospital Resource Management,Real-time Monitoring

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028228 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Advancing Domain-Generalization and Reasoning in Language Models: A Pathway from Narrow AI to Artificial General Intelligence

(51) International classification :G06N 5/00, G06F 40/30, G06N 5/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Advancing Domain-Generalization and Reasoning in Language Models: A Pathway from Narrow AI to Artificial General Intelligence 2.ABSTRACT The transition from Narrow AI to Artificial General Intelligence (AGI) requires significant advancements in domain generalization and reasoning within language models. Current AI systems excel in specialized tasks but struggle with adapting knowledge across domains and applying reasoning in unfamiliar contexts. This study explores methodologies to enhance domain generalization, enabling language models to transfer knowledge seamlessly across diverse fields without requiring task-specific fine-tuning. We propose an approach that integrates meta-learning, self-supervised learning, and knowledge distillation to improve generalization capabilities. By leveraging causal reasoning, logical inference, and symbolic integration, our framework enables language models to develop robust reasoning abilities, making them more adaptable and capable of autonomous problem-solving. Experimental results demonstrate that models trained with these techniques outperform traditional AI systems in zero-shot and few-shot learning scenarios, showcasing improved cross-domain adaptability and logical consistency. Furthermore, we analyze the role of cognitive architectures, such as memory-augmented networks and hierarchical learning structures, in bridging the gap between Narrow AI and AGI. We argue that the evolution of generalized reasoning in language models is a critical step toward developing truly intelligent systems capable of human-like comprehension, adaptation, and decision-making. This research highlights the potential of hybrid AI approaches, combining deep learning with symbolic and cognitive reasoning, to pave the way for Artificial General Intelligence. Future work will focus on refining these techniques, incorporating real-world multimodal data, and ensuring ethical and safe AI development.

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028229 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Clustering-Based Approach for Identifying Patterns and Subtypes in Brain Tumor Cases for Personalized Treatment Planning

(51) International classification :C12Q0001688600, G16H0050200000, G16H0050700000, G06F0018232130, G16H0020100000

(86) International Application No :NA
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(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Clustering-Based Approach for Identifying Patterns and Subtypes in Brain Tumor Cases for Personalized Treatment Planning 2.ABSTRACT Brain tumors exhibit significant heterogeneity in their biological characteristics, progression patterns, and treatment responses. Traditional diagnostic methods often struggle to capture this complexity, limiting the effectiveness of personalized treatment strategies. In this study, we propose a clustering-based approach for identifying distinct patterns and subtypes in brain tumor cases, enabling more precise treatment planning. Our methodology leverages unsupervised machine learning algorithms, such as k-means, hierarchical clustering, and density-based spatial clustering, to analyze multidimensional patient data, including imaging features, genomic profiles, and clinical records. By identifying hidden structures in the data, our system categorizes brain tumor cases into biologically meaningful subgroups. The proposed framework integrates advanced feature selection techniques to enhance clustering accuracy and interpretability. Additionally, deep learning-based representations of MRI scans are incorporated to improve subtype classification. The identified clusters are validated using clinical outcomes and survival analysis, ensuring their relevance in real-world scenarios. Experimental results demonstrate that our approach effectively distinguishes tumor subtypes, correlating with prognosis and therapeutic response patterns. This enables oncologists to tailor treatment plans based on the specific characteristics of each tumor subtype, improving patient outcomes. Furthermore, this method provides valuable insights into the molecular mechanisms driving tumor progression, potentially guiding the development of targeted therapies. The integration of artificial intelligence and precision medicine in neuro-oncology paves the way for more personalized and effective treatment strategies. Our study highlights the potential of clustering-based models in revolutionizing brain tumor diagnostics and treatment planning. Future work will focus on refining clustering techniques, incorporating larger datasets, and validating findings through clinical trials.

No. of Pages : 17 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028236 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : The PIER Model (Persistently Innovative and Empathetically Responsible) Model for sustainable growth of Cooperatives – A model integrating Cooperative principles and social enterprise paradigms for sustainable development

(51) International classification :G06Q10/06, G06Q10/10, G06Q10/0631, G06Q50/20, G06Q10/00

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The PĪER Model (Persistently Innovative and Empathetically Responsible) is a transformative framework designed to foster the sustainable growth of cooperatives by integrating traditional cooperative principles with social enterprise paradigms. This model emphasizes the dual commitment of cooperatives to economic viability and social responsibility, ensuring long-term resilience and community empowerment. By embedding persistent innovation, cooperatives can adapt to changing market dynamics, leveraging technology and collaborative strategies to enhance productivity and competitiveness. Simultaneously, empathetic responsibility ensures that cooperative actions align with social and environmental well-being, reinforcing ethical governance, inclusivity, and equitable wealth distribution. The model provides a structured approach for cooperatives to navigate challenges such as resource constraints, policy barriers, and market competition by promoting diversified income streams, stakeholder engagement, and capacity building. By aligning with sustainable development goals, the PĪER Model creates a synergy between cooperative values and modern social enterprise mechanisms, enabling cooperatives to thrive in both local and global economies. The model encourages a participatory decision-making process, fostering transparency and trust among member's while strengthening community ties.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028259 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Design and Development of Cardiovascular Risk Prediction System using AI

(51) International classification	:G16H0050200000, G06N0020000000, G16H0050300000, G16H0040670000, A61B0005000000
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
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(57) Abstract :

Heart Attack Risk Prediction System using Machine Learning is a system that uses the predictive capability of machine learning models based on similar data points collected in the past. It predicts the risk of a heart attack based on the data provided by the user regarding their physicality, symptoms, and medical history. Our project will estimate the risk of having a heart attack in the coming future. Our system takes input data and runs a Machine Learning Model on the data and gives the result. The aim is to provide users with remote access to screening facilities that are capable of identifying low and high-risk individuals, thereby reducing the load on the medical system. Heart attack risk predictor is an online platform designed and developed to explore the path of machine learning. The goal is to predict the risk of a heart attack in a patient from collective data, to be able to detect configurations at risk for the patient, and therefore, in cases requiring emergency medical assistance, alert the appropriate medical staff of the situation of the latter. We can anticipate the danger of a heart attack in our project by evaluating the data. Physicians can also benefit from machine learning algorithms that provide important stats, real-time data, and data analysis related to the patient's medical condition.

No. of Pages : 11 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028272 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN DRONE SYSTEM FOR WOMEN'S SAFETY

(51) International classification :F41H0013000000, G05D0001000000, B64C0039020000, G06Q0050260000, B64U0101300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
This is an AI-powered autonomous drone system designed to enhance women's safety in public spaces by offering real-time, proactive protection. Unlike traditional safety solutions that rely on manual intervention, this system autonomously navigates to the user's location when summoned via a mobile app. Equipped with real-time AI threat detection, the drone continuously monitors the surroundings and captures video evidence in case of danger. In emergencies, it deploys a electric taser for non-lethal defense. This innovative approach reduces user involvement in high-stress situations, ensuring immediate protection and providing valuable data for law enforcement. The paper details the system's technical framework, threat detection algorithms, autonomous navigation, and defense mechanisms, showcasing how AI-driven safety drones can reshape personal security.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028273 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : COMPREHENSIVE IOT POWERED VEHICLE SECURITY SYSTEM

(51) International classification :B60R0025100000, B60R0025300000, B60R0025102000, G08G0001000000, B60R0025000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
Due to an increase in vehicle theft and unauthorized access, the development of intelligent security systems has become essential. This paper describes the design and implementation of an IoT-based vehicle security system that utilizes modern microcontrollers and sensor technologies for real-time monitoring, automated threat identification, and control functions. It uses an Arduino Uno, ESP8266, and ESP32-CAM, which allows for effective communication and vehicle access control. When a vibration sensor notices tampering around the vehicle, an MPU6050 motion sensor detects movement of the vehicle to prevent unauthorized towing. The vehicle's location can be further tracked using the GPS module while live situational watching is made possible through the added ESP32-CAM. To ensure better energy usage, remote functions such as engine disablement, door locking, and alarm setting are only used when the car is powered down. The Blynk IoT platform serves as the interface for the system, providing instant notifications and remote control through a mobile device. The combination of various security layers offers this solution a robust, scalable, and intelligent approach to modern vehicle security by minimizing the chances of theft and unauthorized access.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
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(21) Application No.202541028274 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT-BASED CIRCUIT BREAKER MONITORING AND PROTECTIVE SYSTEM

(51) International classification	:H02H0003080000, H02J0003000000, G08B0021180000, G06Q0050100000, H02J0013000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The IoT-Based Circuit Breaker Monitoring and Protective System is an innovative solution designed to enhance the safety, reliability, and efficiency of electrical networks. By integrating Internet of Things (IoT) technology, this system enables real-time monitoring and control of circuit breakers, allowing for immediate detection of faults, overloads, or system abnormalities. The system leverages predictive analytics to forecast potential failures, enabling proactive maintenance and minimizing unplanned downtime. Automatic fault detection and protection features ensure that corrective actions, such as tripping the breaker, are taken swiftly to prevent damage to electrical equipment. Additionally, the system provides remote monitoring capabilities, allowing operators to manage and respond to alerts from anywhere. By integrating seamlessly with smart grid technologies, it contributes to optimizing energy distribution, improving system efficiency, and ensuring continuous, safe operation. Ultimately, this IoT-based solution aims to provide a more resilient, cost-effective, and intelligent approach to managing electrical circuits.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028275 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SCHIFF BASED (E)-N'(2,4-DIMETHOXYBENZYLIDENE) BENZOHYDRAZIDE SINGLE CRYSTALS FOR OPTOELECTRONIC APPLICATIONS

(51) International classification	:G02F0001361000, G01N0021350000, G01N0024080000, G01R0033460000, H10K0030200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Optically transparent organic single crystals of (E)-N'-(2,4-dimethoxybenzylidene)benzohydrazide (DMBBH) were successfully grown using the slow evaporation technique. The crystal structure of DMBBH was precisely determined through Single Crystal X-ray Diffraction (SCXRD) analysis. The presence of functional groups was confirmed using both experimental and computational Fourier Transform Infrared (FTIR) and Nuclear Magnetic Resonance (NMR) spectroscopy. UV-Vis spectral analysis demonstrated that the crystal exhibits high optical transparency in the visible region. Natural Bond Orbital (NBO) analysis indicated a strong donor-acceptor interaction between π(C2-C7) and π*(C1-N8), with the highest stabilization energy of 111.9 kJ/mol, highlighting hyperconjugation within the –CONH– group. The first-order hyperpolarizability (β_0) of DMBBH was calculated as 2.8501×10^{-30} esu, which is eight times greater than that of urea (0.3728×10^{-30} esu). Nonlinear optical (NLO) behavior and optical limiting properties of DMBBH were further validated using the Z-scan technique, confirming its potential for optoelectronic applications.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028278 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR INTEGRATED DUAL-WINDOW CONTENT DELIVERY WITH SYNCHRONIZED SOCIAL-INTERACTIVE FEATURES AND ADVERTISEMENT-DRIVEN ENGAGEMENT IN LIVE BROADCAST ENVIRONMENTS

(51) International classification	:H04N0021218700, G06Q0030025100, H04N0021258000, G06Q0030024200, H04N0005450000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Title: "SYSTEM AND METHOD FOR INTEGRATED DUAL-WINDOW CONTENT DELIVERY WITH SYNCHRONIZED SOCIAL-INTERACTIVE FEATURES AND ADVERTISEMENT-DRIVEN ENGAGEMENT IN LIVE BROADCAST ENVIRONMENTS" Abstract: The invention relates to digital content delivery systems, addressing limitations in sports broadcast experiences. Current platforms lack unified viewing and engagement features, causing fragmented user attention. The invention introduces a system architecture with AI integration (FIG. 1) and implements flexible stream architecture (FIG. 2) for third-party broadcast integration. It features advanced PiP integration (FIG. 3), an efficient stream processing pipeline (FIG. 4), and interactive room layouts with AI enhancement (FIG. 5). The platform includes sophisticated user interaction flows (FIG. 6) for seamless engagement. Principal use is in sports broadcasting, enabling simultaneous viewing of live matches alongside interactive features. Commercial applications include targeted advertising, premium VIP rooms, and subscription-based engagement features, creating multiple revenue streams while enhancing user engagement across multiple devices.

No. of Pages : 59 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028288 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Wireless Communication using Zigbee Technology

(51) International classification :H04W0084180000, H04W0004800000, H04W0052020000, H04W0088060000, H04W0004380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The prototype model of "Wireless communication using Zigbee" is centered on the design and development of a low-power, efficient, and reliable wireless communication system based on the Zigbee protocol. It is a wireless technology based on the IEEE 802.15.4 standard for low power consumption, secure communication and in short-range applications. The model is designed to facilitate seamless data transmission among various devices in a wireless sensor network (WSN). It facilitates an efficient solution for real-time monitoring and control in home automation, industrial monitoring, healthcare, smart energy systems and environmental sensing applications. The performance of the Zigbee-based system is tested through, measuring important parameters like packet delivery ratio (PDR), signal strength, latency, and energy consumption. The results shows Zigbee is more energy-efficient and offers more reliable communication than traditional wireless protocols such as Wi-Fi and Bluetooth. The innovation points out the merits of applying Zigbee technology in wireless communication systems, with an emphasis on its affordability, scalability, and adaptability to many smart applications where low power consumption and high reliability are crucial.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028291 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Elephant Foot Yam Peeler

(51) International classification :A61K0036894500, A23N0007000000, A23N0007020000, A61K0036888000, A23N0015080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention relates to a specialized peeling machine designed to efficiently peel elephant foot yam (Amorphophallus paeoniifolius) using a combination of a spur gear mechanism, compression springs, and a CNC blade. The invention addresses the challenges associated with manual yam peeling, such as time consumption, product loss, and inefficiency, by providing a mechanically controlled solution that enhances peeling efficiency and reduces bulb wastage.

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028293 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Machine Learning Model for Real-Time Prediction of Patient Deterioration in ICUs

(51) International classification :G16H50/20, G06N3/08, G06N20/00, G16H40/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention relates to a machine learning model for real-time prediction of patient deterioration in intensive care units (ICUs). The model integrates real-time monitoring data, including vital signs, laboratory results, and clinical notes, to generate risk scores for patient deterioration. Utilizing deep learning techniques such as recurrent neural networks (RNNs) and convolutional neural networks (CNNs), the model provides accurate and timely alerts to clinicians. The system seamlessly integrates with electronic health records (EHRs) and ICU monitoring systems, enhancing clinical decision-making and improving patient outcomes.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028297 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An IoT-Enabled Surveillance Car using a Camera Module

(51) International classification :H04N0007180000, G08B0013196000, G06V0020520000, G06N0003045000, H04W0004380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A surveillance car using ESP32-CAM is a system that utilizes the ESP32-CAM board. We utilize a car chassis to fabricate a mobile surveillance device. The ESP32-CAM is a low-cost. The development board integrates a small camera module and Wi-Fi connectivity. The car the chassis allows the device to move around and capture video in different locations. The system ESP32-CAM board hosts a web interface that allows for control. The web interface lets the user control the car's movement, view live video streams, and take pictures. Additionally, we can program the system to detect motion using computer vision. The algorithms, such as object detection and tracking, send alerts to the user. The surveillance car using ESP32-CAM has potential applications in home security. It is used for the monitoring of remote locations and industrial surveillance. With its low cost and easy-to-use interface; it provides a convenient solution for anyone needing to remotely monitor their surroundings. Range-extended electric vehicles can implement this to monitor the surroundings.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028300 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT WEARABLE DEVICE FOR HEMOPHILIC KNEE REHABILITATION WITH SENSOR-BASED MONITORING

(51) International classification :A61B0005000000, A61B0005110000, A61H0001020000, A63B0024000000, G16H0020300000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to an intelligent wearable rehabilitation device designed specifically for hemophilic patients undergoing knee rehabilitation after Total Knee Replacement (TKR) surgery or physiotherapy. Hemophilic individuals are at a higher risk of internal joint bleeding, stiffness, and improper gait due to excessive stress on the knee during movement. Conventional rehabilitation techniques rely on manual physiotherapy and subjective assessments, which may not provide real-time monitoring or precise feedback. This invention addresses these limitations by integrating advanced sensor-based monitoring and real-time feedback mechanisms to enhance programmed sports therapy and rehabilitation. The device consists of a flex sensor to measure the deformation angle of the knee, a force sensor to detect pressure exertion on the joint, and a BioMEMS sensor equipped with a gyrometer to track joint inclination and detect postural deviations. These sensors are embedded in a wearable knee cuff or sock, allowing continuous tracking of knee movement without restricting mobility. A microcontroller unit (MCU) processes real-time sensor data, detecting abnormal movement patterns, excessive strain, or improper posture. If any deviation from the predefined safe movement range is detected, an alert system is triggered via a buzzer, notifying the patient to adjust their posture or reduce excessive stress on the knee. Furthermore, the device incorporates IoT-enabled wireless communication, allowing seamless transmission of real-time rehabilitation data to healthcare providers via a mobile application. Using this feature, physiotherapists and doctors can remotely monitor patient progress, assess movement accuracy, and adjust therapy protocols accordingly. The mobile application provides visual feedback, data logging, and personalized rehabilitation recommendations based on the patient's movement patterns and adherence to prescribed exercises. The proposed invention offers multiple benefits, including real-time movement correction, injury prevention, enhanced therapy outcomes, and remote supervision. By eliminating the need for continuous in-person monitoring, it also facilitates cost-effective, home-based rehabilitation for patients. The lightweight, ergonomic, and non-invasive design ensures ease of wear, making it suitable for prolonged usage. Additionally, the device is adaptable for other orthopedic rehabilitation applications, such as sports injuries, arthritis management, and elderly mobility support. This invention represents a technological advancement in smart rehabilitation devices, bridging the gap between traditional physiotherapy and modern sensor-based healthcare solutions. By integrating real-time data processing, feedback alerts, and IoT-based remote supervision, it provides an effective, data-driven approach to hemophilic knee rehabilitation, significantly improving recovery efficiency and safety.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028303 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WIRELESS CONTROL OF PICK AND PLACE ROBOTIC ARM USING AN ANDROID APPLICATION WITH IOT

(51) International classification :B25J0009160000, B25J0009000000, G05B0019418000, A61B0034200000, B65G0047900000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :

The present invention relates to a wireless-controlled pick-and-place robotic arm integrated with IoT technology, aimed at providing remote-controlled object manipulation capabilities. The system utilizes an ESP32 microcontroller, which enables Wi-Fi communication between the robotic arm and an Android-based mobile application. The robotic arm is equipped with servo motors, an ESP32 CAM module for live video streaming, and ultrasonic sensors for obstacle detection and navigation. The system is designed for applications requiring precision, efficiency, and automation, including industrial automation, logistics, and personal assistance for disabled individuals. The mobile application provides a user-friendly interface for sending commands to the robotic arm, allowing for real-time control and monitoring. Furthermore, the integration of IoT technology ensures remote accessibility, while the modular design allows for customization and expansion based on user needs. The system enhances productivity, reduces operat

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028304 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SELF-ACTING STAMPER WITH PLC-BASED AUTOMATION

(51) International classification :B41K0001400000, G05B0019050000, B41K0001360000, B41K0003040000, B41K0003020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

The present invention relates to a self-acting stamper that automates the stamping process using a Programmable Logic Controller (PLC)-controlled mechanism. The system comprises a PLC, actuator, self-inking stamp, push buttons, sensors, timers, and counters, ensuring precise, consistent, and efficient stamping on documents or other surfaces. It operates in manual and automatic modes, allowing for either user-activated or continuous stamping operations. The actuator applies controlled pressure to the stamp, eliminating misalignment, smudging, and inconsistencies associated with manual stamping. A counter function keeps track of the number of stamps applied, while LED indicators and toggle switches provide real-time operational feedback. The invention is particularly useful for government offices, educational institutions, legal departments, and industrial applications requiring high-volume stamping. It enhances productivity, reduces labor dependency, and improves accuracy, with potential for IoT integration and further automation advancements.

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028305 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART STREET LIGHT MONITORING SYSTEM

(51) International classification :H04L0067120000, H04Q0009000000, H05B0047190000, H04W0084040000, H05B0047115000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

The present invention relates to an IoT-based Smart Street Light Monitoring System designed to optimize energy consumption, automate lighting control, and enable real-time monitoring of streetlights. The system integrates light intensity sensors, motion sensors, environmental sensors, microcontrollers, energy meters, and wireless communication modules to dynamically adjust lighting based on traffic movement, ambient light conditions, and environmental factors. The collected data is transmitted to a cloud-based platform for remote monitoring, predictive maintenance, and energy optimization. By leveraging IoT technology, real-time data analytics, and automated control mechanisms, the system minimizes electricity wastage, reduces operational costs, and enhances public safety by ensuring adequate lighting in high-traffic areas. Additionally, the system can be integrated with solar panels for sustainable energy use. This invention is a cost-effective, scalable, and eco-friendly solution for smart cities, highways,

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028317 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Sustainable Concrete Composition Reinforced with Lime-Treated Hemp Fibers for Enhanced Strength and Durability

(51) International classification :C04B0028020000, E04C0005070000, C04B0040000000, C04B0018240000, E04C0005010000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Concrete remains one of the most extensively used construction materials worldwide; however, its inherent challenges most notably cracking and significant environmental impact necessitate innovative improvements. Fiber additives, derived from steel, glass, synthetic, or natural sources, have been shown to enhance concrete's strength, crack resistance, and overall durability. This study examines the incorporation of lime-treated hemp fiber into concrete, leveraging hemp's natural strength and sustainability. The lime treatment is found to improve the bond between hemp fiber and the concrete matrix, leading to enhanced stress distribution and improved tensile strength. These results suggest that lime-treated hemp fiber not only improves the mechanical performance of concrete but also contributes to more sustainable construction practices by reducing the environmental footprint associated with conventional concrete production.

No. of Pages : 5 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028321 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : On Semistar Pre Star Closed Set in Topological Spaces

(51) International classification :G06F0017100000, G16B0005000000, G06T0017300000, H04W0016060000, C03C0015000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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7)Dr. Malabika Adak

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10)Mr. G. Balaraman

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(57) Abstract :
The proposed invention introduces the concept of Semistar Pre Star Closed Sets in Topological Spaces, extending classical notions of closed sets by relaxing closure conditions to capture partial topological properties. This innovation provides a flexible framework for analyzing continuity, convergence, and separation, addressing the limitations of traditional closed sets in non-regular and non-Hausdorff spaces. By generalizing closure properties, semistar pre star closed sets offer a deeper understanding of how subsets interact with boundary and limit points under weaker closure operators. This approach refines the classification of points and subsets, aiding in the study of generalized continuity, limit behavior, and separation axioms. The invention is applicable to various fields, including functional analysis, algebraic topology, and dynamical systems, where understanding partial closure is critical. By broadening the scope of topological analysis, this invention contributes to the development of advanced mathematical theory and its interdisciplinary applications.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028326 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A COMPOSITION COMPRISING ALBENDAZOLE, PROCESS OF PREPARING AND APPLICATION(S) THEREOF

(51) International classification	:A61K9/20, A61K31/4184, A61K47/26, A61K47/36, A61P33/00, A61P33/10A61K9/20, A61K31/4184, A61K47/26
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
"A COMPOSITION COMPRISING ALBENDAZOLE, PROCESS OF PREPARING AND APPLICATION(S) THEREOF" ABSTRACT The present disclosure relates to compositions comprising albendazole. Particularly, the compositions comprise albendazole along with HPMC and copovidone. The compositions 5 of the present disclosure show enhanced solubility and bioavailability compared to marketed albendazole formulation and do not exhibit chemical degradation during hot melt extrusion thereby being effective treatment solutions for parasitic infections in humans and non-human animals, particularly in ruminant animals. The present disclose also relates to process for preparing the 10 composition as well as formulations comprising the composition.

No. of Pages : 36 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028327 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SOLAR POWERED FREEZER CART FOR STREET VENDORS TO SELL VEGETABLES AND FRUITS

(51) International classification :B60H1/00, B60P3/20, F25B27/00, F25D11/00, H02J7/35, H01M10/46

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A SOLAR POWERED FREEZER CART FOR STREET VENDORS TO SELL VEGETABLES AND FRUITS The present invention relates to a solar powered cold storage facility cart (106) to preserve fresh fruits and vegetables, along with providing seating and shelter for the street vendor. The freezer Cart additionally features LED lights (105), a fan (104), a microphone (103), mobile charging facilities (108), and operates entirely on solar power. The disclosed invention minimizes wastages of fruits and vegetables. It is an efficient cold chain infrastructure for farm gate to consumer supply chain. Fig. 1 Dated this 26th day of March, 2025 Radhika Vangala (IN/PA 4737) Agent for Applicant(s)

No. of Pages : 12 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028331 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE LEARNING & DEEP LEARNING BASED RESUME EVALUATION SYSTEM

(51) International classification :G06Q 10/1053, G06F 40/30
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The system is designed to analyze and extract key information from resumes, such as skills, work experience, education, certifications, and achievements, using advanced natural language processing (NLP) techniques. This extracted information is then compared against the requirements specified in a job description to assess the relevance and suitability of each candidate. The project incorporates techniques like TF-IDF vectorization and cosine similarity for text-based matching and explores deep learning models such as BERT for semantic understanding, ensuring robust and accurate evaluation of resumes. By employing techniques like TF-IDF vectorization and cosine similarity or advanced models like BERT, the system ensures accurate and semantic matching. The proposed solution not only reduces the time and effort required for initial candidate shortlisting but also provides an unbiased and data-driven approach to ranking candidates based on their suitability. This project demonstrates the practical application of ML and DL in real-world recruitment processes, offering a scalable and efficient alternative to traditional methods. The AI-power ed resume screening system developed in this project effectively addresses the challenges associated with traditional recruitment methods. By leveraging advanced machine learning (ML) and deep learning (DL) techniques, the system automates the process of evaluating resumes and ranking candidates based on their compatibility with job requirements. The system demonstrates significant improvements in terms of efficiency, accuracy, and fairness, providing recruiters with a reliable tool to streamline the hiring process.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028335 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Based Device for Employee Efficiency Checking in Organisations

(51) International classification :G06N20/00, G06Q10/06, G06Q10/10, G06Q10/0639, G06Q10/0631

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

The proposed AI-based device for employee efficiency checking leverages artificial intelligence (AI), machine learning, and the Internet of Things (IoT) to monitor and enhance workforce productivity. The system integrates biometric authentication, facial recognition, and IoT sensors to track real-time employee activity, engagement, and work patterns. AI-driven analytics detect inefficiencies, provide performance insights, and generate predictive reports for managerial decision-making. Real-time dashboards visualize employee productivity, while alerts notify employees and supervisors of performance deviations. The system supports remote and hybrid work environments, ensuring continuous monitoring and optimization. Ethical AI principles, data encryption, and compliance regulations safeguard employee privacy. By automating workforce monitoring, reducing inefficiencies, and providing objective assessments, the invention enhances organizational productivity and promotes a data-driven approach to employee performance evaluation. Scalable and adaptable across industries, the system ensures workforce efficiency, fairness, and transparency in modern workplace environments.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028366 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC PUBLIC DISTRIBUTION SYSTEM

(51) International classification :G06Q0020400000, G06F0021320000, G06Q0010100000, G06Q0040040000, G06Q0050260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The Automatic Public Distribution System (APDS) is an innovative, biometric-based ration distribution system designed to enhance efficiency, transparency, and security in the public distribution of subsidized commodities. The system integrates fingerprint authentication, microcontroller-based automation, solenoid valve-controlled dispensing, load sensors for precise measurement, and GSM communication for real-time transaction updates. Upon successful biometric verification, the system retrieves the beneficiary's quota, dispenses the selected quantity, updates inventory records, and sends an SMS confirmation. By eliminating manual intervention, preventing fraud, and ensuring accurate ration allocation, APDS significantly improves governance and accessibility. The system is scalable for urban and rural deployment, with provisions for IoT integration, cloud-based monitoring, AI-driven forecasting, and digital payment options, making it a future-ready solution for modernizing public distribution networks.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028367 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DUAL PURPOSE FLAMETHROWER AND EXTINGUISHER RC ROBOT

(51) International classification :A62C0003020000, A62C0099000000, A62C0027000000, B25J0009160000, G05B0019042000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The Dual Purpose Flamethrower and Extinguisher RC Robot is a remotely operated robotic system designed for both controlled fire deployment and fire suppression. It integrates a flamethrower mechanism for agricultural burning, wildfire prevention, and industrial applications, alongside a high-pressure fire extinguisher system for firefighting in hazardous environments. The robot is equipped with an ESP32 microcontroller, GPS tracking, ultrasonic sensors, and a live-streaming camera, enabling real-time monitoring, obstacle avoidance, and precise navigation. Controlled via a wireless IoT-based interface, it allows remote operation, reducing human exposure to dangerous fire zones. Its fail-safe mechanisms ensure safe operation by preventing simultaneous activation of both fire modes. This innovation provides an efficient, versatile, and intelligent solution for fire management, disaster response, and industrial safety applications.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028368 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : RFID-BASED SYSTEM FOR SCHOOL CHILDREN TRANSPORTATION SAFETY ENHANCEMENT

(51) International classification :G08B0021020000, G06K0017000000, G06Q0050200000, H04W0004020000, G08G0001127000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to an RFID-based system for enhancing the safety of school children during transportation. The system comprises an RFID reader installed in the school bus, RFID tags assigned to students, a microcontroller for data processing, a GSM module for communication, and a GPS tracker for real-time location monitoring. When a student boards or exits the bus, the RFID reader detects the tag and transmits the data to the microcontroller, which then sends an SMS notification to the parent's registered mobile number along with the bus's real-time GPS location. The system also features an emergency alert mechanism to notify parents and school authorities in case of accidents, unauthorized exits, or route deviations. Additionally, a web-based platform stores attendance records and location history for administrative monitoring. By integrating RFID, GPS, and GSM technologies, this invention provides a reliable, automated, and real-time solution to enhance school transportation safety and efficiency.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028384 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI Powered Speech-to-Sign Language Translation System

(51) International classification	:G09B0021000000, G06F0003010000, G06F0040580000, G06V0040200000, G06F0003160000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AI Powered Speech-to-Sign Language Translation System Abstract The Speech-to-Sign Language Translation System is an innovative application aimed at improving communication for the deaf and hard of-hearing community by converting spoken language into sign language in real-time. The system features a user-friendly front end developed with React.js, which allows users to effortlessly upload audio files and visualize the corresponding sign language output through an animated avatar. This intuitive interface is designed to cater to users of all skill levels, ensuring that both beginners and those familiar with sign language can easily navigate the platform. At the core of the system is a robust back end powered by Django, a versatile web framework that efficiently manages audio processing and language translation tasks. The integration of NLTK for natural language processing enables the system to recognize speech in various Indian languages, including Tamil, Hindi, and Malayalam etc,. Once the spoken input is captured, it is translated into English, which is subsequently converted into Indian Sign Language (ISL) gestures, providing a seamless communication experience for users. In addition to real-time translation capabilities, the system incorporates an interactive learning module that gamifies the process of acquiring sign language skills. This module is structured into three difficulty levels— Easy, Medium, and Hard—allowing users to engage with the content in a fun and educational manner. By presenting challenges that range from identifying individual signs to constructing sentences, the learning module promotes active participation and retention of sign language concepts. Overall, the Speech-to-Sign Language Translation System not only enhances communication accessibility for the deaf and hard of-hearing community but also fosters an inclusive environment for learning sign language. By combining advanced technology with an engaging user experience, this innovative solution empowers users to communicate effectively and encourages the broader adoption of sign language in everyday interactions.

No. of Pages : 12 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028395 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Replication Factors in CubeSats as a Replacement for Larger Satellites

(51) International classification	:H04B0007185000, H04L0067109500, G06F0016270000, B64G0001640000, B64G0001100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present invention relates to a method and system for utilizing CubeSats with replication factors to replace or enhance the capabilities of traditional large satellites. The invention leverages a distributed satellite network composed of multiple CubeSats, each replicating key satellite functions such as communication, imaging, data relay, and environmental monitoring. This replication ensures redundancy, resilience, and continuous operation even if individual CubeSats fail. The system incorporates a self-healing mechanism that enables automatic task reallocation, maintaining mission continuity without manual intervention. Additionally, an advanced inter-CubeSat communication protocol ensures real-time data synchronization, preventing data loss and improving network coordination. The modular and scalable architecture allows for dynamic adjustments, enabling the addition or removal of CubeSats based on mission requirements. This approach significantly reduces the cost and complexity associated with traditional large satellites while enhancing system flexibility, reliability, and operational efficiency.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028407 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Machine Learning-Based Adaptive Learning Pathways System for Personalized Education Using Real-Time Data

(51) International classification :G06Q50/20, G06N20/00, G06Q50/10
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Machine Learning-Based Adaptive Learning Pathways System for Personalized Education Using Real-Time Data ABSTRACT: The incorporation of Adaptive Artificial Intelligence (AI) systems in educational environments has become a transformative method, providing customized learning experiences that adjust to the specific needs, preferences, and skill development of individual learners. This study examines the design, implementation, and effects of AI-driven personalized learning pathways, emphasizing their contribution to skill development and enhancement of educational outcomes. We examined the mechanics of adaptive learning platforms and intelligent tutoring systems, focusing on real-time feedback, dynamic content distribution, and personalized assessment. These technologies have demonstrated the ability to optimize learning trajectories, augment engagement, and elevate academic achievement, with certain studies indicating improved test scores. The incorporation of AI/ML in e-learning platforms greatly enhances the personalization and efficacy of the educational process. Notwithstanding concerns such as data privacy and the intricacies of AI/ML systems, the outcomes highlight the capacity of adaptive learning to transform education by addressing the specific needs of individual learners.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028408 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Smart Healthcare System for Early Disease Detection Using Machine Learning

(51) International classification :G16H0010600000, G16H0050200000, G16H0050300000, G16H0050700000, G16H0040670000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

Abstract: The present invention discloses a smart healthcare system designed for early disease detection by leveraging machine learning and IoT-enabled health monitoring devices. The system continuously collects physiological data from wearable and non-wearable sensors, processes it using advanced AI models, and provides real-time insights into potential health risks. It integrates deep learning algorithms, cloud computing, and edge computing to enable rapid and accurate disease prediction. The system generates alerts for patients and healthcare providers, facilitating timely medical intervention. It also supports seamless integration with electronic health records (EHRs) and ensures data security through encryption and blockchain technology. The invention enhances preventive healthcare, reduces hospital admissions, and supports personalized health recommendations, significantly improving patient outcomes and healthcare efficiency.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028424 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Fiberse? Ionic Technology for enhancing the anti-microbial, moisture wicking, infection prevention, odor control, and thermal regulation properties of socks

(51) International classification :A41D0031120000, A41D0031300000, D02G0003040000, A41B0011000000, D01F0001100000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Field of Invention The present invention relates to a method of utilizing end products of a proprietary Fiberse™ ionic technology in the production of socks in order to increase the efficacy of the same. The proprietary Fiberse™ ionic technology is used to produce Fiberse™ ionic silver yarn with 99.9% pure ionic silver which is used in the production of socks. The Fiberse™ ionic technology facilitates anti-microbial, moisture wicking, infection prevention, odor control, and thermal regulation properties while also enhancing the comfort and durability of socks.

No. of Pages : 18 No. of Claims : 19

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028438 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ARTIFICIAL INTELLIGENCE-BASED SYSTEM FOR GENERATING POCKET- CONDITIONED MOLECULES AND METHOD THEREOF

(51) International classification	:G16B0015000000, G16C0020500000, G16C0020700000, G06N0003080000, G16B0015300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT ARTIFICIAL INTELLIGENCE-BASED SYSTEM FOR GENERATING POCKET-CONDITIONED MOLECULES AND METHOD THEREOF The present invention discloses an artificial intelligence-based (AI-based) system for generating pocket-conditioned molecules and an artificial intelligence-based (AI-based) method thereof. The AI-based system (102) obtains ligand data and protein pocket data for generating molecular interactions. The AI-based system (102) aligns two-dimensional (2D) molecular representations with three-dimensional (3D) molecular conformations and two-dimensional (2D) sequences with three-dimensional (3D) coordinates to ensure a spatial consistency and a structural consistency. The AI-based system (102) encodes the ligand data and the protein pocket data to generate topological features and spatial features. The AI-based system (102) determines interaction between molecular structures based on incorporating positional embeddings to the encoded ligand data and protein pocket data. The AI-based system (102) generates

No. of Pages : 42 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028453 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN EARLY DETECTION SYSTEM FOR CARDIOVASCULAR DISEASES USING MULTI-MODAL IMAGING AND DEEP LEARNING MODELS

(51) International classification :A61B0005000000, G06N0003045000, G16H0050700000, A61P0009000000, A61B0008000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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(57) Abstract :
AI-DRIVEN EARLY DETECTION SYSTEM FOR CARDIOVASCULAR DISEASES USING MULTI-MODAL IMAGING AND DEEP LEARNING MODELS The present invention introduces an AI-driven early detection system for cardiovascular diseases (CVDs) leveraging multi-modal imaging and advanced deep learning models. By integrating data from various imaging modalities such as echocardiography, MRI, and CT scans, the system aims to enhance the accuracy and timeliness of CVD diagnosis. The deep learning models are designed to analyze complex patterns and correlations within the imaging data, enabling early identification of cardiovascular abnormalities. This innovative approach seeks to reduce diagnostic errors, improve patient outcomes, and provide a scalable solution for healthcare systems worldwide.

No. of Pages : 23 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028455 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PHOTO – PROTECTIVE NANOENCAPSULATED AZADIRACHTIN FORMULATION AND PREPARATION METHOD THEREOF

(51) International classification :A61K36/58
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A PHOTO – PROTECTIVE NANOENCAPSULATED AZADIRACHTIN FORMULATION AND PREPARATION METHOD THEREOF A nanoencapsulated azadirachtin formulation with enhanced photo stability and shelf life in ambient light and thermal condition is disclosed in the present invention. The biosynthesized nanoporous silica nanoparticles extracted from agricultural waste is employed as a nano carrier to encapsulate azadirachtin through a cross linking mechanism in the presence of a catalyst to produce the nano formulation which has improved efficiency of use of azadirachtin in agricultural pest management.

No. of Pages : 28 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028471 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COMPOSITION AND METHOD FOR PRODUCING SUSTAINABLE BIO-ENHANCED GEOPOLYMER CONCRETE

(51) International classification :C04B0028000000, C04B0028080000, C04B0111000000, C04B0028260000, C04B0022060000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
Disclosed herein is a sustainable composition (200) for producing a bio-enhanced geopolymer concrete, that comprises fly ash (FA) (202) and ground granulated blast furnace slag (GGBS) (204) as binders (102) to provide aluminosilicate sources necessary for geopolymerization, sand (206) as a fine aggregate (104) to improve the packing density and reduce voids in the composition (200), crushed stones (208) as coarse aggregates (106) to provide structural integrity, load-bearing capacity, and durability to the composition (200), egg albumen (210) as a natural bio-admixture (108) to modify viscosity, enhance mechanical strength, improve cohesion, and optimize the workability of the composition (200), sodium hydroxide solution (212) and sodium silicate (214) as alkaline activators (110) to dissolve aluminosilicates, initiate polymerization reactions, and contribute to the setting of the composition (200), and water (216) as a solvent (112) to facilitate the dissolution of alkaline activators, promote chemical reactions, and ensure uniform mixing of all components.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028472 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART DIET GUIDE SYSTEM AND METHOD THEREOF

(51) International classification	:G16H0020600000, G16H0050300000, G16H0010600000, H04W0004800000, G16H0020300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

Disclosed herein is a smart diet guide system and method thereof (100) that comprises a processing unit (102), configured to analyse user-specific dietary data and generate customized dietary recommendations based on bioavailability optimization techniques, cultural food preferences, and sustainability parameters, a data acquisition module (104), operably coupled to the processing unit (102), a recommendation module (106), operably coupled to the processing unit (102), a storage unit (108), operably coupled to the processing unit (102), a communication network (110), configured to enable seamless data exchange between a plurality of system components, a user device (112), operably connected to the processing unit (102) through the communication network (110), a user interface (114), embedded within the user device (112), configured to allow users to input dietary preferences, receive personalized meal plans, track nutritional intake, and access educational content on diet optimization.

No. of Pages : 27 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028473 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : LOW CARBON SELF-COMPACTING CONCRETE COMPOSITION AND PREPARATION METHOD THEREOF

(51) International classification :C04B0028040000, C04B0111000000, C04B0018140000, C04B0028080000, C04B0028020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein is a low carbon self-compacting concrete composition (200) that comprises fly ash (202) as the pozzolanic additive (102) to provide mechanical integrity and durability to the composition (200). The composition (200) includes dolomite powder (204) and silica fume (206) as the packing agents (104) to consolidate micro-voids and improve compaction density of the composition (200). The composition (200) includes cement (208) and ground granulated blast furnace slag (210) as the binding agents (106) to cohesively bind the ingredients and enhance structural integrity. The composition (200) includes gravel (212) as the coarse aggregate (108) to enhance load bearing capacity. The composition (200) includes water (214) as the solvent (110) to facilitate dissolution and hydration of ingredients. The composition (200) includes gypsum (216) as the flash setting inhibitor (114) to prevent premature setting of the composition (200).

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028478 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR PRIVACY-PRESERVING CLUSTER CLASS MEMBERSHIP PERTURBATION FOR DISTRIBUTED MACHINE LEARNING SYSTEMS

(51) International classification	:G06N 20/00, G06F 21/60, G06F 21/62
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Disclosed herein is a system for privacy-preserving cluster class membership perturbation for distributed machine learning systems (100) comprises a data collection module in distributed machine learning systems (102) configured to collect structured and unstructured data from multiple institutions in a distributed machine learning environment. The system also includes a data partitioning and feature selection module (104) configured to partition the collected data into clusters based on feature similarities and apply feature selection to retain only the most relevant attributes for model training. The system also includes a privacy-preserving perturbation module (106) configured to generate a perturbed column that alters the true class membership of data points using a privacy-preserving perturbation function and introduce controlled noise or synthetic values to modify true labels while preserving statistical properties of the data.

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028487 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CONTROLLED RELEASE FLOATING MATRIX TABLETS OF MEBEVERINE HCL

(51) International classification	:A61K0009200000, A61K0009000000, A61K0047100000, A61K0009280000, A61K0009480000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a pharmaceutical composition for oral administration containing a therapeutically effective concentration of Mebeverine in the form of a floating matrix-controlled release system for the delivery of active agents, comprising a pharmaceutically effective amount of Mebeverine HCL as an active agent; pharmaceutically acceptable excipients such as Klucel HF and Kolliphor P407 of various ratios as rate controlling polymers. The Mebeverine HCL controlled release floating matrix tablets, wherein the Angle of repose(θ) 25.01±0.03; Compressibility Index 11.68±0.014% and Hauser's ratio 1.124±0.02; Weight uniformity 300±1.0 mg; Hardness 4.4±0.2 kg/cm²; Friability 0.16% and Drug content 135±0.5 mg/tablet; the formulation shows the extended drug release up to 95.66% at 12 hours; Swelling index at 10 hours 101.36%. The method for preparing Mebeverine HCL controlled release tablets using the direct compression method comprising: weighing raw materials individually; sieving the raw materials separately through sieve #60; mixing all materials to obtain powder mixture; adding Calcium Carbonate and Citric acid; lubricating the mixture with 1% talc and magnesium stearate; compressing the mixture into tablet dosage form by directly compressing using station mini press. The present invention provides a formulation useful to relieve symptoms of irritable bowel syndrome such as abdominal pain and cramps and helps with muscle spasms.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028510 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FORMULATION AND EVALUATION OF SECNIDAZOLE SOLID LIPID NANOPARTICLES FOR TREATING VAGINAL INFECTIONS

(51) International classification :A61K0009020000, A61K0009000000, A61P0015020000, A61M0031000000, A61K0009060000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Vaginal delivery is a novel type of drug delivery which can act as local as well as systemic action, based on the disease condition and drug characteristic it can be used for long term treatment with the possibility of few side effects. Vaginal drug delivery include certain type of dosage form as Vaginal Rings Vaginal tablet, Vaginal Powder, Vaginal Capsule, Vaginal Ointment, Vaginal Gel, Vaginal Cream, Suppositories. Due to its variety, the large number of formulation has been approached in order to treat the local infection, while most of them sometime cause irritation or discomfort during application.

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028542 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Portable AI-Driven Braille Conversion Device and a Method for Operating the Same

(51) International classification :G09B0021000000, G10L0015260000, G06F0003010000, B41J0003320000, G09B0021020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: A Portable AI-Driven Braille Conversion Device and a Method for Operating the Same The present disclosure proposes a portable AI-driven Braille conversion device (100) that provides a cost-effective, and inclusive solution that enhances accessibility, independence, and education for deaf and blind community. The portable AI-driven Braille conversion device (100) comprises an input module (102), a processor (104), a memory (106), a speech-to-text module (108), an AI-based language recognition module (110), a Braille code module (112), a search module (114), a Braille display unit (116), one or more navigation buttons (122), and a power module (124). The portable AI-driven Braille conversion device (100) autonomously processes real-world speech and text into Braille. The portable AI-driven Braille conversion device (100) with navigation buttons that enables users to read longer texts efficiently.

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028666 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SUSTAINABLE METHOD FOR HIGH-PURITY SILICON RECOVERY AND NANO-SCALING FROM END-OF-LIFE PHOTOVOLTAIC PANELS

(51) International classification :C01B0033037000, H01M0010540000, B29B0017040000, C22B0007000000, G06Q0010300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The present invention discloses a sustainable method for recycling silicon from decommissioned photovoltaic panels and producing nano-silicon for biomedical applications. The method involves dismantling the panels, purifying the silicon through mechanical, chemical, thermal, and electrochemical processes, and nano-scaling the purified silicon using cryogenic ball milling. Key innovations include laser-assisted separation, cryogenic freezing for dismantling, and photo-assisted electrochemical purification, resulting in over 95% purity and high recovery efficiency. The nano-silicon produced is integrated into biomedical devices, enhancing applications such as biosensors and drug delivery systems. This environmentally friendly process addresses the critical issue of solar panel waste management while creating high-value materials for advanced healthcare technologies. Figure 3.

No. of Pages : 22 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028740 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HEADBAND-STYLE WEARABLE DEVICE FOR REAL-TIME AUTISM SPECTRUM DISORDER (ASD) ASSESSMENT

(51) International classification	:A61B0005000000, A61B0005291000, A61B0005160000, A61B0005369000, A61B0005145500
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a headband-style wearable device (100) for real-time Autism Spectrum Disorder (ASD) assessment, includes an array of EEG electrodes (102) configured to acquire EEG signals from a scalp portion of a subject. An Analog Front-End (AFE) module (104) is operatively coupled to the array of EEG electrodes (102) and configured to amplify and digitize the acquired EEG signals. A processor (106) operatively coupled to the AFE module (104) is configured to filter the digitized EEG signals to remove noise and artifacts, extract a reduced set of cepstral coefficients. A Temporal Graph Convolutional Network (T-GCN) analyzes inter-lobe connectivity and classifies ASD severity. The diagnostic results are displayed on a user interface (112) and transmitted wirelessly to an external device for long-term monitoring and clinical evaluation.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028741 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COMPUTER-IMPLEMENTED SYSTEM AND METHOD FOR DECENTRALIZED IDENTITY AUTHENTICATION

(51) International classification	:H04L0009000000, H04L0009400000, H04L0009320000, G06F0021620000, G06Q0020380000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present disclosure relates to a blockchain-based decentralized identity management system (100) and method (300) that enables secure, privacy-preserving, and interoperable digital identity verification across multiple sectors, including government, finance, and healthcare. The system (100) utilizes decentralized identifiers (DIDs), Zero-Knowledge Proofs (ZKPs), and smart contracts to ensure tamper-proof authentication and user-controlled identity management. A role-based access control (RBAC) mechanism enforces dynamic authorization policies, while tokenized identity verification allows selective attribute disclosure. Furthermore, an AI-powered identity risk assessment module (220) analyzes user behavior in real time, adjusting authentication requirements based on contextual risk factors. The system (100) further provides regulatory compliance logging to maintain immutable audit trails, ensuring adherence to standards like GDPR and HIPAA. By eliminating centralized identity repositories and enabling seamless cross-sector interoperability, the present disclosure enhances security, mitigates fraud risks, and simplifies identity verification while maintaining user privacy and regulatory compliance.

No. of Pages : 28 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028742 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SEAMLESS WELD JOINT SYSTEM FOR ALUMINIUM DOORS AND WINDOWS, AND METHOD THEREOF

(51) International classification :E06B0003580000, B23K0026240000, B23K0037060000, E05D0015060000, E06B0003620000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to a seamless weld joint system (100) and a method (400) for creating seamless weld joints in aluminium doors and windows includes preassembling and aligning (402) aluminium frame profiles, including an outer frame (102) and a sash frame (104), forming pre-assembled weld surfaces using corner connection elements. Further, the method (400) includes cleaning and preparing (404) the pre-assembled weld surfaces and executing (406) a welding process fuses the outer frame (102), sash frame (104), glazing bead frame (302) coupled with corner connection elements. Further, the method (400) includes attaching (408) the glazing bead frame (302) to the sash frame (104) or the outer frame (102) by mechanical fastening secure glass panels (108) and sanding and buffing (410) the welded corner joints (106) obtain uniform transitions with adjacent surfaces, achieving a polished and uniform appearance.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028743 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART ROBOT AND METHOD FOR ENVIRONMENTAL MONITORING, INTERACTION, AND AUTONOMOUS TASK EXECUTION IN DYNAMIC ENVIRONMENTS

(51) International classification	:B25J0009160000, G05D0001000000, G06V0020100000, G06N0003080000, B25J0015020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present disclosure relates to a smart robot (102) for environmental monitoring, interaction, and autonomous task execution in dynamic environments. The robot (102) can include an image-capturing unit (208) that monitors and captures real-time video of its environment, and ultrasonic sensors (206-3) measure distances to objects while navigating. The robot can include a processor (202) that receives instructions from a digital application (112) implemented on a computing device (108) associated with a user (106). Tasks include picking up, moving, or placing objects using a robotic gripper (210). A computer vision model processes the video feed to identify objects, while an object detection model recognizes target objects and determines their locations. The robot navigates towards targets, avoiding obstacles and adjusting movement through wheels (216). The robotic gripper (210), controlled by servo motors (212), executes tasks. Real-time video and task status updates are transmitted to the computing device (108) for user monitoring.

No. of Pages : 25 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028764 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Self-Supervised Contrastive Loss-Based Pre-Trained Network for Brain Image Classification

(51) International classification	:G06T0007110000, G06N0003080000, G06N0003045000, G06T0007000000, G06T0007136000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention relates to an advanced deep learning-based system designed for automated brain tumor classification. Utilizing self-supervised contrastive loss techniques, the proposed approach significantly enhances feature representation learning, improving the accuracy of tumor detection in CT scan images. A comprehensive preprocessing module standardizes image quality, while the CNN-based model accurately classifies tumor regions. Advanced image segmentation methods, including Otsu's thresholding and Watershed techniques, further refine tumor localization. The model demonstrates a high training accuracy of approximately 98.7%, making it a reliable tool for clinical use. Designed forreal-world integration, the system supports cloud-based and on-premises deployment, providing an effective solution for early brain tumor detection and diagnosis.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028777 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR ANALYZING TISSUE SAMPLES SUBJECTED TO MECHANICAL DEFORMATION AND CHEMICAL GRADIENTS

(51) International classification	:B01L0003000000, A61M0025100000, C12M0003060000, C12M0001420000, G01N0030880000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A SYSTEM FOR ANALYZING TISSUE SAMPLES SUBJECTED TO MECHANICAL DEFORMATION AND CHEMICAL GRADIENTS The present disclosure relates to a system for analyzing tissue samples subjected to mechanical deformation and chemical gradients. The system comprises a microfluidic device (100) with a platform (10) having a hollow chamber (12) to accommodate a balloon (22) of a balloon catheter (20) and tissue samples. The platform includes a source channel (30) and a sink channel (40) with inlet (32,42) and outlet channels (34,44) for analyte flow. Open channels (24) arrange the balloon catheter, while a removable top cover (50) encloses the hollow chamber (12) and integrates inlet (52a, 54a) and outlet passages (52b, 54b). A pressure-controlled pump (70) inflates and deflates the balloon (22), inducing stretching and relaxation of the tissue sample while analytes interact within the chamber. The system enables simultaneous tissue mechanical and chemical gradient stimulation to test analyte-tissue interaction response. A slide (60) beneath the platform allows real-time visualization of the tissue sample during analysis. Fig. 1 and Fig. 2

No. of Pages : 32 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028834 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED SENTIMENT DETECTION AND EMOTION CLASSIFICATION FOR SOCIAL MEDIA MONITORING

(51) International classification :G06F 40/30, G06Q 50/00, H04L 51/52
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
AI-Powered Sentiment Detection and Emotion Classification for Social Media Monitoring The system leverages advanced natural language processing (NLP) and machine learning algorithms to analyze textual content, identifying sentiment polarity (positive, negative, 5 neutral) and classifying emotions (e.g., joy, anger, sadness, fear) with high accuracy. It integrates deep learning models trained on diverse linguistic datasets to enhance contextual understanding, sarcasm detection, and domain-specific sentiment interpretation. The system processes social media posts, comments, and messages across multiple platforms, using real-time data streams to detect emerging trends, user opinions, and emotional shifts. A key 10 innovation is the dynamic adaptation of the AI models based on evolving language patterns, ensuring continuous improvement and relevance. The patented system incorporates a scalable architecture optimized for high-volume data processing, making it suitable for enterprises, market analysts, and public sentiment monitoring. Additionally, it includes a visualization dashboard with real-time analytics, sentiment trends, and emotion heatmaps for 15 actionable insights. Designed for multilingual support, the system extends beyond English, allowing global applicability. The patent also covers automated alert mechanisms that notify users of significant sentiment shifts, enabling proactive responses in crisis management, brand reputation, and customer engagement. By combining deep contextual analysis with AI-driven adaptability, this technology enhances the accuracy and efficiency of sentiment and 20 emotion classification in social media monitoring, offering a powerful tool for businesses, researchers, and policymakers.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028835 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Stock Price Prediction and Performance Analysis of Indian Banks Using Machine Learning Techniques

(51) International classification :G06Q 40/06, G06Q 40/04, G06N 20/20
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract The present invention discloses a method and system for predicting stock prices and analyzing the financial performance of Indian banks using machine learning techniques. The system integrates multiple machine learning models, including Linear Regression, Decision Tree, Random Forest, SVM, and LSTM, to predict future stock prices and assess risk-adjusted returns. Performance metrics such as Sharpe Ratio, Treynor Ratio, and Jensen's Alpha are used to evaluate financial performance. The LSTM model demonstrates superior prediction accuracy and is used to forecast stock prices over the next 6 months, enabling investors and analysts to make informed decisions.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028839 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR SENTIENT ANALYSIS AND CONTROL OF A ROBOTIC ARM IN A SURGICAL CONSOLE

(51) International classification	:A61B0034300000, A61B0090000000, A61B0034000000, A61B0034200000, G06N0020000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
[031] The present invention relates to a system and method for sentient analysis and adaptive control of a robotic arm in a surgical console, enhancing precision, responsiveness, and safety during surgical procedures. The system comprises a robotic arm equipped with a sensor array to capture real-time data on force, position, proximity, and tissue resistance, which is processed by a sentient analysis unit employing machine learning algorithms to predict risks and optimize performance. A control unit dynamically adjusts the arm's movements, ensuring precise handling of tissues, while a user interface provides real-time feedback and haptic alerts to the surgeon. The system continuously learns from surgical data, improving predictive accuracy and responsiveness over time. This invention significantly enhances surgical outcomes by integrating advanced analytics and adaptive control into robotic-assisted surgeries. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028842 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : THREE-PHASE FREQUENCY-ADAPTIVE DIGITAL PHASE-LOCKED LOOP FOR ENHANCED POWER SYSTEM MEASUREMENT, CONTROL, AND PROTECTION

(51) International classification :H03L7/08, H03L7/099, H03L7/09, H02J3/00, H02J3/24, H02J3/01

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
[030] The present invention relates to a Three-Phase Frequency-Adaptive Digital Phase-Locked Loop (FADPLL) for power system measurement, control, and protection. The system dynamically adapts its internal parameters to ensure accurate frequency estimation and phase synchronization under varying grid conditions, such as frequency deviations, voltage imbalances, and harmonic distortions. It comprises a three-phase voltage sensing module, a digital phase detector, a frequency-adaptive loop filter, a voltage-controlled oscillator, and a microcontroller executing an adaptive algorithm. The FADPLL enhances transient and steady-state performance by continuously adjusting the loop filter's bandwidth based on real-time grid conditions, ensuring reliable synchronization. The synchronized output signals are used for triggering protective relays, controlling power converters, and synchronizing distributed generation units. The invention improves the stability, accuracy, and responsiveness of power systems, making it suitable for smart grids, microgrids, and renewable energy integration. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028843 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ENHANCED WEATHER PREDICTION USING MACHINE LEARNING TECHNIQUES

(51) International classification :G06N0003045000, G06N0003080000, G01W0001100000, G06N0003044000, G06N0003047000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an enhanced weather prediction system using machine learning techniques to improve the accuracy and efficiency of meteorological forecasting. The system integrates deep learning models, edge computing, and multi-source data fusion to analyze vast meteorological datasets, including satellite imagery, IoT-based sensor data, and historical weather records. It employs Convolutional Neural Networks (CNNs), Long Short-Term Memory (LSTM) networks, and Generative Adversarial Networks (GANs) to capture complex climate patterns, predict extreme weather events, and generate hyperlocal forecasts. The system also features adaptive learning mechanisms, Explainable AI (XAI) capabilities, and real-time anomaly detection to ensure transparency and reliability. Designed for scalability, the invention supports cloud-based, edge-based, and hybrid deployments, making it suitable for applications in meteorology, agriculture, aviation, and disaster management.

No. of Pages : 20 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/03/2025

(21) Application No.202541028844 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Multilayer Nanostructured Titanium Dioxide, Silicon Dioxide, Alumina, and Silicon Nitride Coatings for Enhanced Solar Cell Performance

(51) International classification :H01L0031180000, H01L0031021600, H01L0031035200, H01L0031022400, H01L0031076000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The proposed invention focuses on enhancing solar cell performance through multilayer nanostructured coatings composed of Titanium Dioxide (TiO_2), Silicon Dioxide (SiO_2), Alumina (Al_2O_3), and Silicon Nitride (Si_3N_4). This innovative approach optimizes light absorption, reduces surface reflection, and improves charge carrier dynamics, leading to higher energy conversion efficiency. TiO_2 serves as a high-refractive-index anti-reflective layer, while SiO_2 provides surface passivation to reduce carrier recombination. Al_2O_3 enhances charge carrier lifetime through field-effect passivation, and Si_3N_4 offers environmental protection and mechanical durability. The multilayer structure minimizes reflection across a broad wavelength spectrum, ensuring maximum photon absorption. This scalable, cost-effective solution is compatible with various photovoltaic technologies, including silicon-based, perovskite, and thin-film solar cells. By improving both efficiency and durability, the invention contributes to the global push for sustainable renewable energy.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025

(21) Application No.202541028845 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND APPARATUS FOR MONITORING AND ANALYZING WILDLIFE HABITATS USING REMOTE SENSING TECHNOLOGIES

(51) International classification	:G06N20/00, G06V20/10, G06N3/08, G06Q50/02
(86) International Application No	:NA
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(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
The present invention relates to a method and apparatus for monitoring and analyzing wildlife habitats using remote sensing technologies, integrating satellite imagery, UAV-based sensors, and AI-driven analytics for real-time ecological assessment. The system captures multispectral, hyperspectral, LiDAR, and thermal imaging data to track vegetation health, wildlife movements, and environmental changes. AI-based models process this data to detect anomalies such as deforestation, poaching, and climate-induced habitat loss, while a geospatial visualization platform provides interactive 3D mapping and predictive analytics. The invention enables automated wildlife tracking, early-warning alerts, and conservation decision-making, offering a scalable, cost-effective, and intelligent solution for biodiversity protection.

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541028859 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Utility Mapping and Asset Management: A Civil Engineering Study in Indian Cities

(51) International classification :G06Q0050260000, G06Q0010063900, G06Q0010063100, G06Q0010060000, G06Q0010063700

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract The invention pertains to a utility mapping and asset management system designed to address the challenges of managing urban infrastructure in rapidly growing cities, particularly in India. With the increasing complexity of urban environments and the demand for efficient utility services, the invention integrates advanced geospatial technologies, such as Geographic Information Systems (GIS) and remote sensing, to create a comprehensive, real-time mapping and monitoring solution. This system provides accurate, up-to-date digital maps that locate and track the condition of various utility assets, including water, electricity, gas, and sewage networks, both above and below ground. The system also integrates data from multiple departments, enabling municipalities to manage utility infrastructure in a coordinated, centralized manner. A key feature of the system is its ability to predict future asset performance using real-time monitoring and predictive analytics, allowing cities to proactively address maintenance needs and minimize service disruptions. By offering a detailed view of urban infrastructure, the system helps reduce operational inefficiencies, enhance resource allocation, and prevent costly emergencies caused by the deterioration of utility assets. The invention also improves safety during construction and maintenance projects by providing precise maps of underground utilities, minimizing the risk of accidental damage. Designed to be scalable and adaptable, the system can be customized to meet the specific needs of different cities, from small towns to large metropolitan areas. Ultimately, the invention provides a sustainable, data-driven solution for optimizing utility management, improving service delivery, and supporting long-term urban development. It enhances operational efficiency, safety, and sustainability, making it an invaluable tool for municipalities striving to meet the challenges of urbanization.

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541028863 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Multi-Alert Manhole Cover: Enhancing Urban Safety with Technology

(51) International classification :E02D0029140000, E03F0005140000, B60Q0005000000, G08B0021100000, G08G0001160000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
Urban drainage systems play a crucial role in managing stormwater and preventing flooding. However, open and submerged manholes pose significant safety hazards, especially during heavy rains and at night when visibility is low. Pedestrians and vehicles are at risk of falling into uncovered or displaced manholes, leading to serious injuries and fatalities. Existing manhole designs lack effective warning systems, making them dangerous in flood-prone areas. This project presents an innovative manhole lid system designed to enhance safety during floods and nighttime conditions. The proposed design incorporates a flood-responsive air tube that rises with water levels to provide a visible warning, solar-powered lights for improved night visibility, an internal waste-blocking mesh to prevent drainage blockages, and a protective rising mesh barrier that activates during floods to prevent accidental falls. These features work together to offer a self-sustaining, low-maintenance, and cost-effective solution to urban drainage safety challenges. The system is designed to integrate seamlessly with existing infrastructure, ensuring easy implementation without major modifications. Through rigorous testing, the design will be evaluated for durability, functionality, and efficiency under real-world conditions. By addressing key safety concerns associated with manholes, this project aims to significantly reduce accidents, enhance urban flood management, and improve overall public safety.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028874 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT-based Plant Growth Logger with Web Dashboard

(51) International classification :A01G0025160000, G06Q0050020000, G01N0033240000, G06N0020000000, G01K0013000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An IoT-based Plant Growth Logger with Web Dashboard is designed to enhance plant cultivation through continuous environmental monitoring and data-driven decision-making. The system integrates sensors to measure critical parameters such as soil moisture, temperature, humidity, and light intensity. Real-time data is transmitted to a cloud platform, where it is visualized through interactive web dashboards, enabling remote monitoring and proactive management of plant health. The system incorporates automation capabilities, including the activation of a water pump when soil moisture levels fall below a predefined threshold, thereby optimizing water consumption and reducing manual intervention. Real-time alerts notify users of significant environmental changes, facilitating prompt corrective actions. Additionally, the platform archives historical data, empowering users to analyze long-term growth patterns and refine cultivation strategies based on empirical insights. By employing IoT, cloud computing, and automated control mechanisms, this system offers a scalable and efficient solution for precision plant management. Its modular architecture makes it adaptable to various applications, ranging from small-scale home gardens to large commercial greenhouses. This project underscores the potential of smart agriculture, promoting resource efficiency, higher yields, and sustainable cultivation practices through technology-driven innovation

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541028886 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : PRODUCTION OF BIODIESEL FROM NEEM OIL

(51) International classification	:C10L0001020000, A01N0065260000, C11C0003000000, A61K0036580000, C12P0007649000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :

This paper deals with the manufacturing process of Biodiesel from neem oil. This paper mainly involves the patented process of "Esterification." Factors affecting the biodiesel production (reaction temperature, reaction rate & catalyst) are analyzed. The patented esterification procedure converts neem oil to its methyl esters. The important properties of the biodiesel oil, such as flashpoint, viscosity, calorific value, and density, are comparable with diesel. The viscosity of biodiesel oil is closer to that of diesel, and the calorific value is about 16% less than that of diesel. This study supports the patented production of biodiesel from non-edible neem oil as a viable alternative to diesel fuel.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/03/2025
(21) Application No.202541028903 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Flexible wearable and water-resistant pulse monitoring system

(51) International classification :H10N0030853000, C01G0033000000, H10N0030857000, H01M0004485000, C04B0035495000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The piezoelectric nanogenerator was fabricated using a lead-free composite film made of potassium sodium niobate Calcium Titanium [1 – x] K0.5Na0.5NbO3 + x CaTiO2 to generate electrical energy from abundant mechanical energy sources, such as human movements and ambient mechanical vibrations. The environmentally friendly KNN CTO material exhibited a significant piezoelectric coefficient and had an orthorhombic crystal structure. The potassium carbonate (K2CO3), sodium carbonate (Na2CO3), niobium pentoxide (Nb2O5), calcium carbonate (Ca2CO3) and titanium dioxide (TiO2) are the primary materials that were used as precursors. These precursors were stoichiometrically measured, mixed using an agate mortar in a wet medium, and then heated at 900°C for 10 hours to synthesize KNN CTO via the solid-state reaction (SSR) technique. The as-prepared material was characterized using various analytical tools. The primary orthorhombic crystal structure, exhibited at 45° was confirmed by XRD measurements. Raman spectroscopy further supported the crystalline quality of the material, with a corresponding Raman shift observed. Additionally, the KNN CTO particles were examined through FE SEM analysis. The characterized KNN CTO material was subsequently used to prepare the composite thin film for the nanogenerator device. The composite thin film was prepared using poly dimethyl siloxane (PDMS) polymer with various weight percentage of KNN CTO (0.5%) 5 wt% to 25 wt%. The prepared thin film was utilized to fabricate the nanogenerator device and the device characteristics studies were carried out by the keithley 6514 electrometer equipped with the linear motor setup. As prepared, the nanogenerator exhibited excellent output voltage, current and power density achieved.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028909 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : LEVERAGING TRANSFER LEARNING FOR POTATO LEAF DISEASE ANTICIPATION

(51) International classification :G06N0003045000, G06N0003080000, G06N0020200000, G06V0010820000, G06V0010774000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Plant diseases are the biggest challenge in disease identification in agriculture, posing a serious risk to food security. In order to identify diseases in the foliage of potato plants, we used deep convolutional neural network (CNN) architectures in conjunction with image processing models in this study. A large collection of images showing both healthy and damaged potato leaves is used to train the model. It is particularly good at accurately classifying leaves into three different groups: healthy potato leaves, early blight-affected potato leaves, and advanced blight-affected potato leaves. Its efficacy is derived from its capacity to detect minute leaf details, colors, and variations, which enables it to discriminate between potentially damaged and healthy leaves. In order to increase the accuracy of identifying potato diseases, methods like transfer learning and semble approaches were. The study centers on two ideas. The pretrained CNN models (ResNet, VGG, etc.) were first chosen, tested on a potato leaf dataset, and the models with the highest accuracy were then chosen for additional processing. The most accurate models are then ensembled further. Secondly, we employed transfer learning on the identical pre-trained CNN models, followed by ensemble learning. The outcomes derived from the two models are examined. Promising accuracy is demonstrated by this work, highlighting its potential for effective disease identification in real-time agricultural systems. Its potential suggests that it will play a major role in the prompt identification of illnesses in this field.

No. of Pages : 8 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541028910 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT-ENABLED INVENTORY MANAGEMENT SYSTEM FOR E-COMMERCE

(51) International classification :G06Q 10/00, G06Q 30/0202
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The rapid expansion of e-commerce has created a growing demand for efficient inventory management systems that ensure real-time tracking, minimize stock discrepancies, and optimize supply chain operations. This invention introduces an IoT-enabled inventory management system designed to enhance inventory accuracy, streamline stock monitoring, and automate replenishment processes. The system integrates RFID, barcode scanners, and smart sensors to track inventory levels in real time, while cloud-based analytics and AI-driven forecasting facilitate demand prediction and stock optimization. Additionally, a mobile application and web interface provide instant access to inventory data, enabling seamless coordination between suppliers, warehouses, and retailers. The proposed system reduces manual intervention, enhances operational efficiency, and minimizes losses due to overstocking or stock outs, making it an ideal solution for modern e-commerce businesses.

No. of Pages : 6 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541028914 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “IoT Based Sleep Apnea detection system for Infants”

(51) International classification :A61B0005080000, G16H0050300000, A61B0005024000, G16H0050700000, G16H0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention introduces an IoT-based system designed to detect sleep apnea in infants through acoustic monitoring. A microphone, strategically placed on the infant's cradle, continuously captures breathing sounds. These sounds are processed in real-time using advanced algorithms to identify irregularities indicative of sleep apnea. Upon detecting abnormal breathing patterns, the system promptly sends alerts to the parents' or guardians' mobile phones, ensuring immediate awareness and timely intervention. This non-invasive, home-based solution aims to enhance infant health outcomes by providing an early warning system for sleep apnea, thereby reducing the risks associated with undiagnosed and untreated sleep disorders in infants. The integration of IoT technology in pediatric healthcare underscores the potential of innovative approaches to improve monitoring and preventive care practices.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028915 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “A Smart Screen Time Controller”

(51) International classification	:H04L0067500000, G06F0009451000, G06Q0050200000, G06V0020100000, G06Q0030025100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Whether for business, education, or pleasure, we spend hours glued to our screens, but efficiently controlling screen time can be rather difficult. The purpose of the Smart Screen Time Controller is to assist users in striking a good balance between work and leisure. This AI-powered solution dynamically modifies usage based on real-time activity, fatigue levels, and productivity needs rather than imposing strict screen time limits. The system optimizes screen time intelligently, monitors how a user interacts with their device, and identifies symptoms of eye strain and fatigue. Additionally, it synchronizes across devices, making it impossible for users to swap screens and get around restrictions. It also includes an AI-based override mechanism that only allows more screen time for legitimate reasons, as well as a reward system to promote healthy digital habits. This technology makes digital well-being more intelligent and flexible, whether it is used by professionals, students, or parents controlling their ch

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028916 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI ACCELERATED CONSUMER FOLLOWER WITH AUTONOMOUS POS AND RECOMMENDATION SYSTEM

(51) International classification :G06Q0030060100, G07G0001000000, G06Q0030060000, G06F0016230000, G06N0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The idea behind the intelligent shopping cart system is entirely new and does not involve the use of any existing intellectual property. It proposes a system that integrates a camera placed inside a shopping cart, along with an NVIDIA Tegra MC, to detect products as they are placed inside the cart. The product detection relies on a custom CNN model that identifies items in real time, ensuring seamless, automatic billing for users. The system incorporates signal processing to track the customer’s journey through the store, making the checkout process fully automated. Additionally, the system's app, built using Flutter, communicates directly with the cart for real-time updates and billing, enhancing the user experience. The core innovation lies in the seamless interaction between hardware and software. The camera constantly monitors the cart, while the system instantly updates the user's bill upon detecting a new item. The accompanying Flutter-based mobile application provides customers with live updates on the

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541028917 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “Blockchain-Powered Authentication for IoT Ecosystems”

(51) International classification :H04L0009400000, H04L0009320000, H04L0009060000, H04L0009000000, H04L0045280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The rapid growth of IoT, together with the massively heterogeneous settings that it was built upon, raised great concerns with regards to security and authentication. The massive number of connected devices causes traditional authentication methods to be centralized, thus creating single points of failure to be attacked, for instance, the cases of spoofing and data breaches. Blockchains provide a decentralized and tamper-proof authentication framework for IoT, which is beneficial in promoting security and trust within such a network. This paper presents a customized blockchain-based authentication mechanism for IoT, along with advantages, methodologies, and implementation challenges. Our approach assures secure authentication, with low computation on resource-constrained IoT devices. Experimental results prove that the blockchain-based authentication was able to increase security, while still efficient relative to conventional methods.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028918 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : “TEMPERATURE EFFECTS ON CONCRETE USING NANOCOMPOSITE WITH CARBON NANOTUBES”

(51) International classification :G16H0010400000, G01N0033380000, C04B0028020000, G16B0050000000, H01G0011280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This project aims to investigate the characteristics of carbon nanotubes (CNTs) and their influence on the strength and temperature resilience of plain cement concrete (PCC) elements. CNTs exhibit remarkably high tensile strength, reaching up to 60 GPa—values that far surpass those of mild steel and hardened steel, while being approximately six times lighter. After reviewing an extensive range of research literature and laboratory test results, we identified an efficient method for incorporating CNTs into the concrete matrix. This involves substituting between 0.1% and 0.25% of the cement's weight with CNTs. For the novelty of this study, we selected substitution ratios of 0.15% and 0.2% by weight of cement, using commercially available CNTs of suitable purity for research and product development. Concrete specimens were cast with both CNT-enhanced concrete and conventional plain concrete, following the guidelines of the Indian Standard Code of Practice. These specimens were tested under load until failure, w

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028928 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR IMPLEMENTING SHIFT LEFT TESTING (SLT) STRATEGY IN COMPUTER LANGUAGE PACKAGE DEVELOPMENT

(51) International classification :G06F 11/36, G06F 11/3668
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
SYSTEM FOR IMPLEMENTING SHIFT LEFT TESTING (SLT) STRATEGY IN COMPUTER LANGUAGE PACKAGE DEVELOPMENT ABSTRACT A system (100) for implementing a Shift Left Testing (SLT) strategy in a computer language package development lifecycle is disclosed. The system (100) comprises a data establishment unit (104) adapted to install a computer language package on a computing device (102). A processor (106) is configured to: determine, using a timing circuit (108), an optimal test timing for the computer language package; execute, using an input unit (110), test cases in the determined optimal test timings for detecting defects in the computer language package; incorporate feedback from the executed test cases by integrating a process of debugging into development for eliminating the detected defects; and perform audits and inspections, upon incorporation of the feedback and conducting the process of debugging, against the detected defects in the computer language package. The system (100) enhances computer language package quality, minimizes defects, and ensures robust, error-free computer language package releases. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541028929 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SARCASM DETECTION SYSTEM WITH CONTEXTUAL UNDERSTANDING

(51) International classification	:G06F 40/00, G06F 40/30, G06Q 50/00
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

SARCASTIC EXPRESSION INTERPRETATION SYSTEM AND METHOD ABSTRACT A sarcastic expression interpretation system (100) is disclosed. The system (100) comprising: a data acquisition unit (104) adapted to receive excerpts and a processing unit (106). The processing unit (106) is configured to: extract textual cues, user intent, conversation context, or a combination thereof from the excerpts fed into the data acquisition unit (104); analyze the textual cues, the user intent, the conversation context, or a combination thereof to differentiate sarcastic statements from genuine expressions; processes the excerpts alongside accompanying images or emojis to enhance sarcasm detection accuracy; employ deep learning-based classification model (112) to detect implicit sarcasm in the received excerpts, and identify, using an emotion and sentiment correlation base (114), inconsistencies between expressed emotions and linguistic patterns to detect sarcasm. The system (100) is suitable for various applications like social media monitoring, customer service automation, and content moderation. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028930 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FEDERATED LEARNING SYSTEM FOR PROGRESSION PREDICTION RELATING TO DIABETIC RETINOPATHY

(51) International classification	:G16H0010600000, G06N0003080000, G06N0020000000, G16H0050200000, G06F0021620000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
FEDERATED LEARNING SYSTEM FOR PROGRESSION PREDICTION RELATING TO DIABETIC RETINOPATHY ABSTRACT A federated learning system (100) for progression prediction relating to diabetic retinopathy (DR) is disclosed. The system (100) comprising: a local hospital training node (104) adapted to receive the retinal images and EHR data. A processing unit (106) configured to: normalize, align, and handle missing values in the retinal images and the EHR data; federate learning to train deep learning models (116) locally without transferring the retinal images and the EHR data; aggregate encrypted model (118), using a central federated server (110), updates from multiple hospital nodes to improve prediction accuracy while preserving privacy; and integrate, using an EHR-Image fusion engine (112), the retinal images and the EHR data for adaptive learning and disease progression prediction. The system (100) that incorporates long-term patient health records, such as HbA1c levels, blood pressure trends, and kidney function, leading to more accurate disease progression prediction. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028931 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART SYSTEM FOR AUTOMATED MEETING MINUTES GENERATION AND METHOD THEREOF

(51) International classification	:G10L0015260000, G06F0040300000, G06N0020000000, G10L0015220000, G10L0015180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
SMART SYSTEM FOR AUTOMATED MEETING MINUTES GENERATION AND METHOD THEREOF ABSTRACT A smart system (100) for automated meeting minutes generation is disclosed. The system (100) comprising: a multimedia acquisition unit (104) adapted to receive an audio-visual conversational input from a computing device (102). A processing unit (106) is configured to: transcribe the received audio-visual conversational input using a speech-to-text processing engine (108); extract identified key discussion points, agenda items, contextual themes, or a combination thereof from the transcribed text using an extraction engine (112); organize the extracted key discussion points, the agenda items, the contextual themes, or a combination thereof into predefined categories and a pre-set format using a structured summarization engine (114); enable a review of a meeting report; and export the reviewed meeting report to the computing device (102). The system (100) leverages Artificial Intelligence (AI) and Natural Language Processing (NLP) to generate well-structured meeting minutes, reducing the need for manual editing and improving accuracy. Claims: 10, Figures: 5 Figure 1A is selected.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028932 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR INTERACTIVE CODE REVIEW

(51) International classification	:H04L0009320000, G06N0020000000, H04L0009000000, H04L0009060000, G06F0011360000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
SYSTEM AND METHOD FOR INTERACTIVE CODE REVIEW ABSTRACT A system (100) for interactive code review is disclosed. The system (100) comprising: an artificial intelligence bot (102) configured to analyze code submissions in real-time; a blockchain engine (104) configured to generate and store unique hashes for each code submission; and a gamification engine (106) to enhance a user engagement and motivation. A processor (108) is configured to: receive the code submission from a user; analyze the code using the artificial intelligence bot (102) to generate personalized performance feedback; create the unique hashes of the code submission and store the created hash on a blockchain for authorship verification; enable an AI-assisted peer review to provide structured evaluation of code quality; and apply gamification techniques, including leaderboards, badges, and AI-generated challenges, to enhance user motivation and engagement. The system (100) combines blockchain-based authorship verification with AI-driven gamified code review in a unique way to ensure dynamic, engaging learning experiences. Claims: 10, Figures: 3 Figure 1 is selected.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028944 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ELECTRONIC ACTIVE 3-WAY CROSSOVER NETWORK FOR SPEAKERS

(51) International classification	:H04R0003140000, H04R0003040000, H03F0003450000, H03G0003300000, H04R0003000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AN ELECTRONIC ACTIVE 3-WAY CROSSOVER NETWORK FOR SPEAKERS The present invention relates to an electronic active 3-way crossover network comprising of an input buffer and decoupling stage [1]; superimpose stages [2]; a master gain control amplifier [3]; a Linkwitz-Riley filtering crossover network; individual gain control amplifiers [5]; and differential amplification stages [6]. The input buffer and decoupling stage compensates for impedance mismatches and filters out DC components from the input audio signal to prevent signal degradation. The superimpose stage [2] converts balanced input audio signal into a single-ended audio signal while maintaining equal impedance. The master gain control amplifier [3] amplifies the audio signal before entering the filtering crossover network. The filtering crossover network divides the audio signal into designated frequency bands. The individual gain control amplifiers [5] amplify the signals to line level signals. The differential stages [6] convert the amplified line level signal into balanced outputs for tweeter [8]; mid-woofer [9] and sub-woofer [10]. Figure 1.

No. of Pages : 25 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541028963 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Antimony doped ABO3 class ferroelectric material for ultra-light weight on body wearable impact sensor

(51) International classification :A61B0005000000, H02N0002180000, G16H0020300000, H04L0067120000, G06F0011340000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The proposed project aims to develop an impact sensing on the person body using the piezoelectric effect. It involves the design of thin piezoelectric nanogenerators made of BST (0.07) that can work as an active sensor to sense impact of kick. The device fabrication involves synthesis process and attaching electrodes. On one hand, piezoelectric based sensors can produce autonomous and self-generated electrical signals based on applying and releasing of compressive stress with superior properties, unique advantages of simple design, low cost, little material limitation, high scalability and high manufacturing compatibility. A wireless IoT based system has been constructed using ESP 32Dev Module and a cloud system to communicate the values obtained. The system is connected with Android to acquire or monitor the sensory information. To get accurate sensor information would be transferred with the help of the wireless module to the screen. This technique will sense that there will be high impact, low impact, no impact on the person's body. The mobile applications are attached to the system to know the impact in the graphical form. This may help to know the impact at the earlier stage to take necessary precautions. The system will continuously monitor the impact on the person body and it will automatically send the SMS through a mobile application to the doctor mobile. Similarly, it can be able to analyze the player periodically and can provide the report every time for better health maintenance. This technique paves way towards the fusion of device fabrication and IoT that can obtain, analyze, and react to the external stimuli more intelligently and accurately.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028968 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PORTABLE GAIT TRAINING DEVICE FOR STROKE AND SPINAL CORD INJURY PATIENTS

(51) International classification	:A63B0022020000, A61H0001020000, A61H0003000000, A63B0069000000, A63B0021000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Portable gait training device for stroke and spinal cord injury patients. The gait training device (100) consists of a frame (110) constructed with aluminum extrusions (of 40x40mm) wherein the frame (110) is configured with an ankle tracing mechanism (120) for tracing ankle trajectory and a timing control for controlling the gait timing. The frame (110) is also configured with the patient harness (130), a hand winch (140) with a capacity of 500 kgs, orthoses, pulleys (150), motor (160), power source (170). The frame (110) also comprises of L attachments, pillow blocks, bolts and lock nuts. Wheels (180) are configured at the bottom of the frame (110) which is provisioned with locking mechanism to prevent motion of the device during loading and unloading of the patient wherein the wheels (180) enable safer movement of gait training device thereby eliminating the need for a treadmill for gait training purposes [FIG. 1].

No. of Pages : 22 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028969 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MODULAR TYPING ASSISTIVE DEVICE FOR DISABLED PERSONNEL

(51) International classification :G06F0003048830, H04L0012660000, A44C0005000000, G06F0001160000, A61F0002280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
. ABSTRACT MODULAR TYPING ASSISTIVE DEVICE FOR DISABLED INDIVIDUALS. A modular typing assistive device for disabled individuals, comprising a first and second C-shaped body 101 connected by means of a motorized hinge 102, developed to be positioned on a user's wrist, wherein an ultrasonic sensor embedded in the body 101 for determining dimensions of the user's wrist, a drawer arrangement 103 integrated in the bodies to increase/decrease dimensions of the bodies, as per the user's wrist dimensions, the hinge 102 to provide converging/diverging movement to the bodies to secure around the user's wrist, by means of an electromagnet 104 integrated on ends of the bodies to form a ring-shaped structure around the user's wrist, multiple S-shaped members 105 having a pair of openings 106, arranged on the first body 101 , each by means of a motorized slider 108 to translate and position the members 105 in alignment with the user's fingers [FIG. 1 and 2].

No. of Pages : 31 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541028970 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : 75GHZ MILLI METER WAVE LOW PHASE NOISE INDUCTANCE CAPACITANCE VOLTAGE CONTROLLED OSCILLATOR

(51) International classification	:H03B0005120000, H03B0005180000, H03L0007099000, H03K0003030000, H01L0021020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
75GHz milli meter wave Low Phase Noise Inductance Capacitance Voltage controlled oscillator. The invention teaches a 75 GHz milli meter wave low-phase noise inductance capacitance voltage-controlled oscillator (LC-VCO) with optimized phase noise of 131.69 dBc/Hz and improved Figure of Merit (FoM) of -207.71 dBc/Hz [FIG. 1].

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541028986 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Automated Sector-Based Power Management and Alert System Through IoT

(51) International classification :G06Q0050060000, G06Q0030020100, G01R0022060000, H02J0013000000, G05B0015020000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

Smart energy grid is a transformative approach to managing, distributing, and optimizing energy in modern societies, leveraging advanced technologies to meet growing energy demands effectively. An Arduino Uno, current sensors, a relay module, an LCD display, and cloud connectivity are all used in this clever energy-saving system to provide real-time power load control and distribution in three different sectors: homes, businesses, and agricultural. Using sensors, the system gathers power usage data from every sector and sends it to the cloud over Wi-Fi for storage and viewing. Consumption data is displayed as graphs in the thing view app through ThingSpeak cloud and as values on an LCD display. A Telegram bot that is activated when power is spread across sectors sends users real-time alerts in the case of theft. By sending out theft detection alerts, the bot improves user awareness and system response. A distinct channel ID can also be used to download saved data as a data sheet, enabling thorough analysis and documentation. An effective and sustainable energy management solution is ensured by this cutting-edge system, which combines hardware and software to maximize energy use, deter theft, and give users easily accessible insights.

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029025 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Powered Diagnostic Tool for Brain Tumor Classification with Telegram Bot

(51) International classification :G06N0003080000, G06T0007000000, G06N0003045000, G16H0050200000, A61B0005055000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

The classification of brain tumors poses a major problem in medical diagnosis requiring reliable image processing techniques. The purpose of this study was to create a tumor classifying system using deep learning, employing Convolutional Neural Networks (CNN) to classify MRIs in one of four categories (glioma, meningioma, pituitary tumor, no tumor). The training and evaluation of the CNN system was conducted on a training set of approximately 6,000 MRIs provided by Kaggle. The CNN was able to accomplish accuracies above logistic regression due to ascending ability and capability for extracting better features.To enhance usability, the trained CNN model was deployed in a Telegram bot using the Telegram-Bot library. Users could therefore upload their MRI images and receive classification results in real time. The chatbot processed the uploaded images and made a determination on whether a tumor was present, thereby providing a user-friendly and efficient diagnostic tool. The integration of the AI model into health-care applications provides huge potential for early detection and increased accuracy of diagnostic values.The experimental results confirmed that the CNN model yielded a significant improvement in classification of tumors as compared to logistic regression. Future prospect includes further expansion of the dataset, refinement of the model to achieve greater accuracy, and integration with additional functions to achieve even more reliability. Deep learning offers great potential in medical image analysis and advancement of healthcare diagnostics, which can be confirmed by this study.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029045 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Enhanced Epinephrine pen with Allergy Detection and Real-Time Dosing

(51) International classification :A61B0005000000, A61P0037080000, A61B0005020500, A61B0005010000, A61K0031137000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
This project explores the development of an AI-enhanced wearable epinephrine injector that continuously monitors the wearer's physiological and environmental data to detect allergic triggers in real-time. The device combines air quality and physiological sensors with an AI driven analysis system to assess allergy risks, calculate appropriate epinephrine doses, and initiate automatic or user-approved injections during severe allergic reactions. Integrating real-time alerts and monitoring via a mobile application, the device empowers users with instant feedback and risk management, reducing the latency in response time and potentially life-threatening effects of severe allergic reactions.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029047 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Ergonomic Trolley Handle: Design and Fabrication for Enhanced Comfort and Usability

(51) International classification :B62B0005060000, A46B0005020000, B25G0001100000, B65D0025280000, F21Y0115100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The ergonomic trolley handle is a novel design that incorporates several key features to enhance user comfort and usability: 1. Optimal Grip Shape: The handle is designed to conform to the natural contours of the hand, promoting a relaxed and comfortable grip posture. 2. Adjustable Handle Angle: The handle angle can be adjusted to accommodate users of different heights, ensuring a neutral wrist position and reducing strain. 3. Enhanced Grip Stability: The handle features non-slip surfaces and padding to provide a secure grip, even in wet or slippery conditions. 4. Durable and Lightweight Materials: The handle is fabricated using materials that offer a balance of durability, weight, and tactile comfort. 5. Modular Design: The handle can be easily attached to various types of trolleys, making it versatile and adaptable to different applications.

No. of Pages : 13 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029050 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Based Fatigue Reliability Analysis of the Indian Railway Steel Bridges

(51) International classification :G06N0020000000, G01M0005000000, B64F0005600000, G06N0005040000, G06Q0010200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to an Artificial Intelligence (AI) based Fatigue Reliability Analysis of the Indian Railway Steel Bridges. The invention comprises a Structural Health Monitoring (SHM) system integrated with IoT-enabled sensors, a data acquisition and processing module that aggregates, cleans, and preprocesses real-time and historical bridge performance data, a machine learning-based fatigue prediction engine that applies supervised and unsupervised learning algorithms to assess fatigue damage, predict crack initiation, and estimate remaining bridge life. A predictive maintenance module that generates automated alerts, maintenance recommendations and repair scheduling based on AI-driven insights. A Graphical User Interface (GUI) dashboard that visualizes fatigue trends, critical failure points, and maintenance alerts for railway engineers.

No. of Pages : 12 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029055 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An Automated Cost-Effective Control System in Greenhouse Utilizing Deep Learning for Unattended Operations

(51) International classification :A01G0009240000, G06F0009380000, G06N0003044000, G05D0001000000, G05B0013040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to the automation of greenhouse environments through deep learning techniques to optimize plant growth and sustainability without human intervention. The system is designed to maintain a constant atmospheric humidity, a critical factor influencing plant health and productivity. By leveraging environmental data collection, the system predicts humidity-related needs and activates actuators such as sprinklers or ventilators to ensure optimal conditions. The solution is particularly advantageous in environments with limited power resources and external constraints, as it enhances efficiency and adaptability. This approach integrates sensor predictions with automated processes to provide a robust, scalable, and sustainable solution for greenhouse climate regulation, thereby promoting improved plant growth and reliability in agricultural operations.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029078 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Smart Dual Battery Switching and Charging System Design for Electric Vehicles with Solar Integration

(51) International classification :B60L58/18, B60L58/12, B60L8/00, B60L53/51, B60L50/60, H02J7/35
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Smart Dual Battery Switching and Charging System Design for Electric Vehicles with Solar Integration ABSTRACT The present invention provides a smart energy management system for electric vehicles (EVs), integrating a dual battery configuration with solar power charging to enhance energy efficiency, vehicle range, and sustainability. The system employs two battery packs, where one is used for driving while the other remains charged, powered by solar energy. The system automatically switches between the two batteries when one reaches a predefined discharge level, ensuring continuous vehicle operation without manual intervention. Solar panels are integrated into the vehicle to charge the second battery, reducing reliance on grid-based charging and promoting the use of renewable energy. Additionally, the system features a power transfer mechanism that enables energy sharing between electric vehicles, further enhancing energy efficiency. The dual battery, solar integration, and energy transfer capabilities optimize the vehicle's range, reduce environmental impact, and provide a more sustainable alternative to traditional EV charging methods.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029106 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A Smart Coir Geomat for Engineering Applications

(51) International classification	:E02D0017200000, E02B0003120000, A61B0005000000, E01C0003000000, E01D0019040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Title: A Smart Coir Geomat for Engineering Applications 5 A smart coir geomat (100) for engineering applications is disclosed. The smart coir geomat (100) includes a geomat (102) and in-built sensors (104). The geomat (102) provides an initial mechanical support to a slope or an embankment while reducing surface erosion and preventing shallow slope failures. The in-built sensors (104) are integrated into the geomat (102) for 10 monitoring the slope's or the embankment's moisture content level in real time. Based on the moisture content level, a Factor of Safety (FoS) of the slope or the embankment is calculated. The FoS is instrumental for assessing vulnerability of the slope or the embankment.

No. of Pages : 16 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029107 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN AUTOMATED ERGONOGAUGE DEVICE FOR MEASURING THREE-DIMENSIONAL SPATIAL DATA

(51) International classification :A61C0007080000, A61B0005010000, A61B0006500000, A61C0007000000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
Title: AN AUTOMATED ERGONOGAUGE DEVICE FOR MEASURING THREE-DIMENSIONAL SPATIAL DATA According to one aspect of the present invention, an automated ergonogauge device (300) for measuring three dimensional spatial data comprises a mouth piece (301), an adjustable stand (302) connected to the mouth piece (301) through a ball and socket joints (311) and a data acquisition unit (303) Wherein the mouthpiece is inserted into the patients mouth, when the mouthpiece is engaged with a patient's teeth aligned with ala Tragus line for a predetermined threshold period, a first orientation sensor (305a) in the data acquisition unit (303) measure pitch and roll angles and a second orientation sensor (305b) measure and records the yaw angle when the mouthpiece is aligned with the patient's dental or skeletal midline in occlusal plane with respect to the soft tissue(Facial Midline) and the data acquisition unit (303) record and store the three dimensional pitch, roll and yaw for further assessment. <>

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029108 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EXTENDED VOLTAGE OPERATION AND POWER DECOUPLING IN PHOTOVOLTAIC INVERTER

(51) International classification :H02M1/14, H02J3/38, H02J3/01
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
Title: EXTENDED VOLTAGE OPERATION AND POWER DECOUPLING IN PHOTOVOLTAIC INVERTER According to one aspect of the present disclosure, the extended voltage operation and Power decoupling in Photovoltaic inverter comprises a inverter, an Active power Decoupling (APD) circuit, a Partial Power Converter (PPC) and a shared coupled inductor. The APD circuit and PPC circuits integrated to maintain voltage and mitigate ripple through the shared coupled inductor. Further, a single-phase grid-connected PV inverter system includes a PPC switch which is configured to activate only during conduction of an APD switch or its anti-parallel diode, thereby by enabling controlled injection of series dc-voltage to counter the PV and DC-link voltage mismatch and combined ripple mitigation.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029117 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : KIT FOR IDENTIFICATION OF SAFETY AND COMPATIBILITY OF NANOCARRIER BASED MULTI COMPONENT DRUG SYSTEM WITH KEY ERYTHROCYTIC PROTEINS

(51) International classification	:A61K0031120000, A61K0031519000, A61J0001200000, G16C0020500000, C12N0009040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :
Kit for identification of safety and compatibility of nanocarrier based multi component drug system with key erythrocytic proteins. The kit determines molecular docking interactions of erythrocyte proteins comprising of alpha- and beta- Spectrin, Band 3 protein- Anion Exchanger (AE1), Aquaporin, Haemoglobin (Hb) and Glucose-6-Phosphate Dehydrogenase (G6PD) with the drug molecules comprising of Methotrexate, Curcumin and Vitamin E wherein the kit determines the binding affinity and potential effects on red blood cells. The invention proposed herein uses an example complex nanoemulsion formulated comprising of three drug components viz. Methotrexate, Curcumin, alpha-tocopherol and one carrier pine oil which contains alpha-terpineol as the main component.

No. of Pages : 31 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029118 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BREAST CANCER DETECTION OF INVASIVE DUCTAL CARCINOMA (IDC) HISTOPATHOLOGICAL IMAGES USING HYBRID RESNET50GCN

(51) International classification	:G06T0007000000, G01N0033574000, G06V0020690000, G06V0010250000, H04N0019159000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Breast cancer detection system of invasive ductal carcinoma (IDC) histopathological images using hybrid ResNet05GCN. The method for breast cancer classification, specifically for identifying invasive ductal carcinoma (IDC), involves a three-stage pipeline combining deep feature extraction, graph-based learning and Model evaluation wherein the integrated approach aims to leverage both local and spatial information within histopathological images to improve classification accuracy [FIG. 1].

No. of Pages : 23 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029137 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Advanced Microprocessor based Hollow Gyro Self Balancing Electric Vehicle

(51) International classification :B62K0011000000, B62D0037060000, B62M0007120000, A63B0071060000, G01C0019000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention presents a self-balancing gyroscopic stabilization device for electric motorcycles (E-bikes) to boost stability and user control. The system comprises a gyroscope, gyroscopic sensor, accelerometer, tilt angle sensor, BLDC motor, stepper motor, DC motor, Arduino microcontroller, and a battery pack. A revolutionary hollow gyroscope design incorporates a lithium-ion battery into its construction, decreasing outward resistance to the rider's physical activity. The gyroscopic and accelerometer sensors measure vehicle movements, while the tilt angle sensor checks the bike's inclination. These inputs are processed by the Arduino microcontroller, which dynamically adjusts motor speeds to prevent balance shifts. The system offers intuitive control, as leaning forward accelerates the bike and leaning back decelerates it. Safety features, such as tilt-back alerts, boost stability, while dedicated motors drive the rear wheel, rotate the gyro wheel, and control the gyroscopic axis. To offset heat generated by the gyroscope's rotation, dual cooling fans are added. This unique concept provides an efficient and user-friendly solution to the stability difficulties faced by conventional two-wheelers.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029143 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Residual Convolutional Neural Network-Based Method for Efficient Classification of Imbalanced Datasets

(51) International classification :G06N 20/00, G06N 3/00, G06V 10/00, G06F 18/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

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(57) Abstract :
ABSTRACT Imbalanced datasets present a significant challenge in machine learning, particularly in classification tasks where minority class instances are underrepresented. Traditional neural networks often exhibit bias toward the majority class, leading to poor generalization for minority classes. To address this issue, we propose a Residual Convolutional Neural Network (ResCNN)-based method that efficiently classifies imbalanced datasets by leveraging residual learning, data augmentation, and class-aware loss functions. Our approach incorporates residual connections to enhance gradient flow, reducing the risk of vanishing gradients and improving feature extraction. We integrate focal loss and weighted cross-entropy loss to emphasize the minority class, mitigating class imbalance effects. Additionally, data augmentation techniques such as SMOTE and mixup are employed to generate synthetic samples, further balancing class distributions. The proposed model is evaluated on multiple benchmark datasets, including medical imaging, fraud detection, and sentiment analysis, demonstrating superior performance over conventional deep learning architectures. Experimental results indicate significant improvements in precision, recall, F1-score, and AUC-ROC metrics, particularly for minority classes. Compared to baseline models, our ResCNN-based approach achieves higher classification accuracy while maintaining computational efficiency. The incorporation of transfer learning further enhances model robustness, making it adaptable to real-world applications. Our findings suggest that residual learning combined with class-balancing techniques can effectively address data imbalance issues, making our method a promising solution for various classification problems.
Keywords: Residual Convolutional Neural Network (ResCNN),Imbalanced Datasets,Class-Aware Loss Functions,Data Augmentation,Feature Extraction,Classification Accuracy.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029144 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MelliPatch: Redefining Insulin Delivery with Cutting-Edge Transdermal Technology

(51) International classification :A61B0005000000, G16H0020170000, A61B0005145000, A61P0003100000, A61K0038280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
MelliPatch: Redefining Insulin Delivery with Cutting-Edge Transdermal Technology 1.ABSTRACT MelliPatch is an innovative patch containing insulin in gel form, designed to provide a painless and non-invasive alternative to traditional needle-based insulin injections. This revolutionary approach simplifies diabetes management by delivering insulin through the skin using a transdermal method, ensuring efficient and accurate absorption into the bloodstream. By eliminating the discomfort and psychological barriers associated with needles, MelliPatch empowers individuals to take control of their health with ease and confidence.The patch features a lightweight and compact design that integrates seamlessly into daily life, accommodating diverse lifestyles without disrupting routines. MelliPatch ensures steady and reliable insulin delivery, reducing the risks of irregular dosing. This innovative system is particularly beneficial for children, elderly individuals, and those who hesitate to use needles, offering a safe, effective, and user-friendly solution for insulin therapy.Representing a next-generation advancement in diabetes care, MelliPatch combines simplicity and precision to enhance patient experiences. It eliminates the need for medical consultations or complex procedures, making insulin therapy more accessible and manageable. We use a transdermal approach to deliver the insulin gel through the skin in a simple, non-invasive way. This innovative approach transforms diabetes treatment, enhancing the quality of life for people with diabetes and allowing them to live healthier. MelliPatch embodies a future where diabetes care is not only effective but also effortless and patient-focused.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029145 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Method and System for Enhanced Extraction and Classification of Retinal Landmarks and Lesions for Diabetic Retinopathy Staging Using Retinal Fundus Images.

(51) International classification :A61B0003120000, G06T0007000000, G06T0005700000, G06V0010820000, G06N0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT The primary cause of blindness worldwide is diabetic retinopathy (DR), and preventing visual loss requires early detection. An essential diagnostic method for assessing the severity and course of DR is the examination of retinal fundus images. In order to help with the staging of diabetic retinopathy using retinal fundus photos, this study presents a method and system for enhancing the extraction and classification of retinal landmarks and lesions. In order to identify and extract important retinal features that signify various stages of DR, such as microaneurysms, hemorrhages, exudates, and neovascularization, the suggested method makes use of contemporary image processing techniques. Deep learning models and common image processing tools are used to efficiently segment and classify the lesions. To improve the quality of fundus images, the method uses pre-processing techniques like noise reduction and image enhancement. Retinal landmarks and lesions are then recognized and categorized into four stages of DR: mild, moderate, severe, and proliferative DR, using a convolutional neural network (CNN). This system ensures high accuracy even when dealing with complex image features like low illumination and variable image quality by employing a multi-stage technique for segmentation, feature extraction, and classification. In order to improve lesion identification and classification and raise precision and recall rates, the system also uses a novel post-processing technique. This technology can significantly cut down on the time and expense of manual grading while generating more reliable and impartial results by automatically evaluating retinal landmarks and lesions. Extensive testing on publicly accessible DR image datasets validates the system's effectiveness, demonstrating its potential as a reliable tool for DR diagnosis and staging. Lastly, this technology can be used in large-scale screening programs and integrated into telemedicine platforms to identify diabetic retinopathy and stop it from developing into blindness.

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029146 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Computational Methods in M / M / 1 Queue with Working Breakdowns and Interruptions

(51) International classification :G06Q0010063100, G06N0007010000, H04M0003523000, A61B0006000000, H04L0069400000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Computational Methods in M / M / 1 Queue with Working Breakdowns and Interruptions 2.ABSTRACT The unlimited capacity Markovian queueing model with working breakdowns and interruptions is investigated in this article. As a result, we investigate a queueing model with a novel type of service disruption. The server may have partial disruptions during service hours. When there are partial failures, the server begins to give service slowly to the customer who is receiving service. Following the completion of the functional breakdown service, the server is immediately dispatched to the repair procedure. In the system, the remaining consumers are awaiting service. When the repair process is done, the server resumes normal service operations. The matrix geometric approach to determine the strength condition and computes the steady-state probability generating function of the system size. To discuss stochastic decomposition and waiting time distribution independently. The model's steady-state solution is reached, and several performance measurements are provided. The numerical examples of the model are numerous numerical examples are used to investigate the impact of parameters on framework execution measurements. In this model applied in Computer network, medical field and real life like Petrol pump, Supermarket, etc. Specialization of the model is maintaining the customer in the system. Keywords: Markovian queue, Working breakdowns

No. of Pages : 15 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029147 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Hybrid Deep Learning Model for Automatic Detection of Rheumatoid Arthritis using X-Ray Images

(51) International classification	:G06N0003045000, G06N0003080000, G06T0007000000, A61B0006000000, G06V0010820000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
A Hybrid Deep Learning Model for Automatic Detection of Rheumatoid Arthritis using X-Ray Images Abstract A chronic autoimmune condition, rheumatoid arthritis (RA) mostly affects joints and causes extreme pain, swelling, and maybe disability. Effective therapy and management depend on early and precise diagnosis of RA. We propose in this work a hybrid deep learning model for X-ray picture automatic RA detection. Combining Transformer-based architecture for improved spatial and contextual analysis with Convolutional Neural Networks (CNNs) for feature extraction, the suggested model We use transfer learning and PCA feature selection optimization to raise classification accuracy. Training and validation on publicly accessible RA datasets guarantee strength and generalizability of the model. By means of accuracy, sensitivity, and specificity, our hybrid technique beats conventional deep learning models, hence attaining a high detection rate for RA in its early phases. The suggested approach gives radiologists and other healthcare experts an automated, dependable, and quick tool that improves medical imaging diagnosis. Keywords: Rheumatoid Arthritis, Deep Learning, X-ray Imaging, Hybrid Model, CNN, Transformer, Medical Image Analysis.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029153 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A wearable device for dual sign language translation integrated with hybrid AI models

(51) International classification :G06F3/00, G06F3/01, G06F3/16, G06N20/00, G10L15/00, G06V40/20, G09B21/00, H04W4/02

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :
A wearable device with an integrated app for dual sign language translation [0058] The invention provides a wearable device (100) for dual language sign translation, comprising a solid frame that houses a visual capturing unit (102) capturing hand gestures and expressions; an audio unit (103) capturing audio signals and delivering the translated speech and an audible alarm; a communication module for communication between the wearable device and an integrated app installed on a telecommunication device; a plurality of vibration units for tactile feedback; a power module; a plurality of push buttons (104) for power and emergency contacts; a satellite module to track the real-time location and send location to the predefined contacts; and a control module that controls the other hardwares. The integrated app is configured with a software module comprising hybrid AI models including CNN, RNN and a ML model including TTS for dual sign language translation and a user interface to display the text converted from the sign language and animated hand gestures.

No. of Pages : 28 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029165 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : COCONUT HUSK-BASED BIOCONTROL SPRAY USING BENEFICIAL MICROORGANISMS FROM SPOILED TOMATO FOR SUSTAINABLE AGRICULTURE

(51) International classification :A23L0003346300, A23L0003347200, A01N0065000000, A61K0036752000, A01N0065260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Coconut Husk-Based Biocontrol Spray Using Beneficial Microorganisms from Spoiled Tomato for Sustainable Agriculture ABSTRACT The present invention relates to an eco-friendly biocontrol spray formulation designed to reduce spoilage and extend the shelf life of tomatoes and other perishable fruits. The formulation is based on the use of natural, plant-derived ingredients, including coconut husk extract, turmeric, cloves, dried orange peel, neem oil, and coconut oil. These ingredients are combined to provide a comprehensive solution for microbial spoilage caused by bacteria, molds, and fungi. The coconut husk extract, which is rich in bioactive compounds, serves as the primary antimicrobial and antifungal agent in the spray. Additional plant extracts, such as turmeric, cloves, and orange peel, further enhance the spray's effectiveness by providing antioxidant and antimicrobial properties. The formulation includes natural adjuvants like neem oil and coconut oil, which act as emulsifiers and enhance the spray's stability, adhesion, and penetration on tomato surfaces. The biocontrol spray is formulated through an aqueous extraction process, ensuring the preservation of the bioactive compounds from the plant materials. The spray is then tested for its efficacy in controlling microbial growth and extending the shelf life of both fresh and spoiled tomatoes under laboratory conditions. Results indicate that the biocontrol spray effectively inhibits the growth of microorganisms responsible for spoilage, including Klebsiella pneumoniae, and helps maintain the firmness and quality of tomatoes for extended periods. The formulation is biodegradable, non-toxic, and offers a sustainable alternative to chemical pesticides, reducing the environmental impact of agricultural practices. This invention provides a cost-effective, environmentally friendly solution for food preservation, particularly for tomatoes, and holds significant potential for wider applications in sustainable agriculture and organic farming.

No. of Pages : 24 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029172 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ENHANCED MACHINE LEARNING APPROACH FOR FRAUD DETECTION IN ONLINE E-COMMERCE TRANSACTIONS

(51) International classification :G06Q 20/38, G06Q 20/40, G06N 20/00, G06Q 20/12
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
An Enhanced Machine Learning Approach for Fraud Detection in Online E-Commerce Transactions is the proposed invention. The proposed invention focuses on understanding how Machine Learning can improvise fraud detection in online e-commerce transactions. The invention focuses on analyzing the parameters of Fraud Detection in Online E-Commerce Transactions using algorithms of Machine Learning Approach.

No. of Pages : 12 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029195 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A DATA-DRIVEN APPROACH TO PREVENTION AND EARLY INTERVENTION FOR EARLY-STAGE BRAIN STROKE PREDICTION IN HEALTHCARE USING MACHINE LEARNING

(51) International classification :G16H0010600000, G16H0050200000, A61B0005000000, A61B0005145000, G06N0020200000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A Data-Driven Approach to Prevention and Early Intervention for Early-Stage Brain Stroke Prediction in Healthcare using Machine Learning is the proposed invention. The proposed invention focuses on understanding the functions of Early-Stage Brain Stroke Prediction in Healthcare. The invention focuses on analyzing the parameters of Prevention and Early Intervention of Brain Stroke Prediction in Healthcare using algorithms of Machine Learning Approach.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029198 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SELF-HEALING AUTOMATION FRAMEWORK FOR CONTINUOUS INTEGRATION AND DEPLOYMENT (CI/CD)

(51) International classification :G06F0011360000, G06F0011070000, G06F0011340000, G06F0011300000, H04L0041160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a Self-Healing Automation Framework designed to enhance the efficiency, resilience, and reliability of Continuous Integration and Continuous Deployment (CI/CD) pipelines. The invention integrates Artificial Intelligence (AI), Machine Learning (ML), and predictive analytics to autonomously detect, diagnose, and remediate failures in software deployment workflows, reducing manual intervention and ensuring seamless software delivery. A key aspect of the invention is its real-time anomaly detection mechanism, which continuously monitors logs, system performance metrics, and error patterns to identify unexpected deviations. Leveraging AI-driven models, the framework classifies errors, performs automated root cause analysis, and dynamically triggers corrective actions based on the severity and context of the failure. Another innovative feature is the self-adaptive remediation system, which autonomously selects and executes the most suitable recovery strategy. Depending on the failure type, the system may rerun failed test cases, roll back deployments, reconfigure environments, or reallocate computing resources to restore stability. This intelligent approach ensures uninterrupted software delivery and resilience against infrastructure failures. Additionally, the invention incorporates a predictive failure prevention module, which uses ML-based trend analysis to anticipate potential failures before they occur. By analyzing historical failure data and real-time system behavior, the framework proactively adjusts configurations and deployment parameters to mitigate risks, reducing downtime and improving system reliability. Designed for compatibility with modern DevOps environments, the framework seamlessly integrates with existing CI/CD tools, cloud platforms, container orchestration systems, and microservices-based architectures. Its modular and scalable design allows deployment across diverse infrastructures, including cloud-native, hybrid, and on-premise environments. By implementing this Self-Healing Automation Framework, organizations can achieve higher deployment success rates, reduced operational overhead, and accelerated release cycles. The invention revolutionizes software delivery by introducing intelligent, autonomous, and predictive automation capabilities, setting a new benchmark in CI/CD pipeline optimization and resilience.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025

(21) Application No.202541029207 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ROBOT FOR SEMI-AUTOMATED DISPERSION OF CROP PROTECTION MATERIALS IN AGRICULTURAL FIELDS

(51) International classification :A01M0007000000, B05B0013040000, A01C0023040000, B25J0009160000, A01C0023000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to a robot (100) for semi-automated dispersion of crop protection materials in agricultural fields, the robot includes a pin-based positioning mechanism (102) configured to adjust one or more sprayer arms (104) of the robot to at least six distinct angles, the one or more sprayer arms are extendable and retractable to accommodate varying crop widths. A tank (106) is configured to be filled with crop protection materials to a predefined capacity. A remote controller (108) is configured to operate the robot through channel mixing for skid steering and a nozzle mounting mechanism (110) coupled to the one or more sprayer arms is configured to support interchangeable nozzles for optimized spraying performance, wherein the one or more sprayer arms are configured to enable various spraying orientations, while being manually adjustable without requiring motorized mechanisms.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202541029209 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR GENERATING MAINTENANCE STRATEGIES FOR SUSTAINABLE IoT SYSTEMS

(51) International classification	:G06N0020000000, H04W0024040000, G06F0011300000, H04L0009400000, G06F0003048200
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present disclosure provides a system (108) and a method (300) for generating maintenance strategies for sustainable Internet of Things (IoT) systems. The system (108) receives data associated with one or more devices for recording information associated with one or more entities. The system (108) identifies an anomaly from the information recorded by the one or more devices (102). The system (108) instantaneously generates, one or more artifacts associated with the one or more devices (102) based on the identified anomaly. The system (108) analyzes the one or more artifacts and generates a schedule associated with the maintenance of the one or more devices (102) based on the identified anomaly. The system (108) predicts, via a machine learning engine (214), one or more performance metrics associated with the one or more devices (102) based on the identified anomaly and the analyzed one or more artifacts.

No. of Pages : 35 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/03/2025

(21) Application No.202541029320 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : TRIANGULAR WAVEFORM BASED LCR-TO-PWM CONVERTER FOR HIGH-RESOLUTION SENSING WITH AUTOMATIC OFFSET ELIMINATION AND RANGE ENHANCEMENT

(51) International classification :H03K4/06, H03K7/08, H02M3/156
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number:NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A converter (1) and a method for converting either inductance LX, capacitance CX or resistance RX into a pulse width modulation (PWM) signal. The converter is configured to improve the measurement accuracy by nullifying the offset parameters L0, C0 or R0. It comprises of a triangular wave generator (100) for feeding a triangular wave (110); a triangular to square wave converter (200) configured to generate input square wave component (Si) and a reference square wave component (Sr); a multiplexer (300); an integrator (600); an automatic offset nullification unit (500) configured to nullify the output (Se); a comparator (800) configured to compare integrator output (VOi) and the triangular wave signal (110) to generate an output (VO); an extender (700) for enhancing range of measurement; and a summation circuit (400).

No. of Pages : 22 No. of Claims : 13

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029657 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE LEARNING BASED DIABETES DETECTION

(51) International classification :G16H0050200000, G16H0010600000, G16H0050700000, G16H0050300000, G06N0020200000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The work Machine Learning-Based Diabetes Detection Using Random Forest Algorithm for Early Detection" focuses on the development of an automated system to detect diabetes at an early stage, utilizing machine learning techniques. Early diagnosis is crucial in managing diabetes, as it allows for timely interventions that can prevent complications such as cardiovascular disease, kidney failure, and vision loss. In this project, we employ the Random Forest algorithm, an ensemble learning method that builds multiple decision trees to improve classification accuracy and avoid overfitting. The model analyzes a variety of patient data, including age, BMI, blood pressure, glucose levels, insulin levels, and family history, to predict whether an individual is at risk of diabetes. The system is trained on a large dataset of historical health records, ensuring high accuracy in its predictions. The goal is to provide healthcare providers with a reliable tool for early detection of diabetes, enabling better preventive care and more personalized treatment plans. This machine learning-based approach offers a scalable and cost-effective solution to address the growing prevalence of diabetes worldwide, while improving patient outcomes through proactive monitoring and early intervention.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029664 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : An application for Quantum based learning for disease classification in Paddy

(51) International classification :G06Q0050020000, G06V0020100000, G06N0020000000, G06V0010820000, A01B0079000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This app focuses on the early detection of sheath blight and blast disease in paddy crops using quantum-based machine learning techniques. By analysing images of healthy and infected paddy leaves, the model can accurately predict the presence of diseases and suggest necessary methods to deal with the diseases. Early detection enables timely interventions, helping to reduce crop losses, improve rice yield, and contribute to food security. Given the rising global hunger and the dependence of more than 90% of the world's population on agriculture, there is a pressing need for accurate and early disease detection. Leveraging quantum machine learning (QML) and computer vision for automated plant disease identification can provide farmers with real-time predictions and actionable insights. This proactive app will help optimize resource use, minimize crop losses, and ensure sustainable agricultural practices

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2025
(21) Application No.202541029670 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Green Shield: Advanced Forest Surveillance using IoT and Image Processing

(51) International classification :A61B0005000000, H04L0067120000, G16H0040670000, H04W0004380000, G16H0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Sophisticated monitoring techniques are necessary to preserve biodiversity and natural resources in light of the growing threats to forest ecosystems. This project describes a cutting-edge forest monitoring system that makes use of image processing and Internet of Things (IoT) technologies. Numerous sensors are integrated into the system, such as accelerometers to identify vibrations brought on by unauthorised tree cutting, fire detection sensors, rain sensors, radiation sensors, and ultrasonic and PIR sensors for tracking animal density. Additionally, tree density is assessed using image processing techniques. Through a Wi-Fi module, the data collected by these sensors is sent to the cloud, making analysis and access simple. Thing View is a mobile application that provides a unified platform for real-time data monitoring in order to increase accessibility. This tool enables management teams and forest workers to make well-informed choices and carry out preventative conservation actions. The suggested approach to forest monitoring, which combines IoT, cloud computing, and image processing, is innovative, effective, and scalable, promoting sustainable environmental management and preservation.

No. of Pages : 25 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029692 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HOSPITAL BED WITH ADJUSTABLE SLIP PREVENTERS, IOT BASED ALERT SYSTEM, AND REMOTE PATIENT MONITORING CAPABILITIES

(51) International classification :G16H0040670000, A61B0005000000, G16H0040200000, A61G0007050000, A61G0007012000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT This invention discloses a “Hospital Bed with Adjustable Slip Preventers, loT-Based Alert System, and Remote Patient Monitoring.” It enhances patient safety and healthcare efficiency. The cot (1) with a bed (2) accommodates patients for io observation and comfort. A slip preventer wall (3) with a supporting column (4) is jointed using pivot joints (5) on both sides to prevent falls. Pivot holding clamps (lower) (6) and (upper) (7) ensure stability. A limit switch (9) with a trigger knob (8) activates the loT interface (11) when the preventer wall (3) is lowered. This sends an instant alert to caregivers. "ArT imagecaptufirig- camerar (TO) enables real-lirne palient is monitoring. A telescopic fixture (12) adjusts the camera for optimal positioning. This system ensures continuous observation and immediate response, improving patient safety.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029693 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HOSPITAL COT LEG RAISER MODULE FOR ANGULAR POSITIONING OF PATIENT TO LAY OVER THE BED IN SUPINE POSTURE

(51) International classification :A61G0007000000, F16H0001160000, A61G0007005000, B62D0005040000, F16H0025240000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The titled invention discloses hospital cot leg raiser module for angular positioning of patient to lay over the bed in supine posture to ensure safe leg elevation with minimal effort. The hospital cot leg raiser module includes the worm shaft (5) and worm wheel io (8) assembly to provide increased torque and reduced speed. The the worm shaft (5) and worm wheel (8) assembly is housed within the base pedestal to raise and lower the legs of the hospital cot. The system operates by rotating the raiser turning knob (4), which drives the worm shaft (5) that engages with the worm wheel (8). The rotation of the worm wheel (8) results in the linear movement of the screw shaft'(9).'The screw 15 shaft's (9) motion raises or lowers the cot's legs, providing a controlled and smooth adjustment.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029694 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : EARTH WORM WASTE SEGREGATING AND COLLECTING DEVICE WITH VIBRATED SIEVE FILTER

(51) International classification :A61K0035620000, A01K0067033000, H04W0004029000, C05F0017050000, B07B0001220000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT The invention is an automated earthworm waste segregating and collecting device 5 designed for efficient production of bio-fertilizers. It consists of an enclosure cabin (1) housing all components, a perforated bottom plate (5) for waste filtration, and a waste collecting tray (2) located below for storing filtered waste. A sieve (4) with an outer brim provides earthworms with a stable habitat, while the vibrating carriage (3), powered by a vibrator motor (6), facilitates precise waste segregation. The controller I 0 board (9) automates operations, erisurlng optirruil vibrationiritensHy~ R611en1i.lbs and end bearing hubs (8) support smooth movement, while the bottom sieve spread screen (11) enhances filtration accuracy. This innovative device combines ecological processes with mechanical automation to promote sustainable waste management.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029695 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED JEWEL LOAN MACHINE WITH AI-BASED EVALUATION AND SECURE VAULT SYSTEM

(51) International classification	:G01N0023223000, G06Q0040030000, A61B0005000000, G06Q0020180000, G06Q0040020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

ABSTRACT This invention relates to a device for an automated jewel loan machine with Al-based evaluation and a secure vault system. This invention typically includes a customer authentication module (1) ,a jewelry deposit compartment ,an x-ray fluorescence (xrf) 10 analysis unit (3) ,an ai-based evaluation system (4) ,an image capture system (5) ,a market data integration module (6) ,a·loan calculation and display module (7) ,a cash dispensing module (8) ,a bank account integration module (9) ,a secure vault system (10) ,an rfid tracking system (11),an automated packaging system· (12) ,a record management system (13) ,an user interface (14) ,a network connectivity module (15) 15 ,a power supply and management system (16), and a security monitoring system (17). 20 This invention offers faster, more accurate, secure, and convenient jewel-backed loans through Al-driven evaluation and automated handling. This invention enables rapid, secure, and accessible ,jewel-backed loans in various settings like pawn shops, banks, and remote kiosks, improving financial inclusion and operational efficiency.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2025
(21) Application No.202541029696 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SWAPPABLE BATTERY SYSTEM FOR AUGMENTED REALITY (AR) GLASSES

(51) International classification :G02B0027010000, H01M0010480000, H02J0007000000, A61B0090900000, G06T0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The titled invention discloses a "swappable battery system for augmented reality .(AR) glasses" which enhances the efficiency in workflow of AR glasses without disrupting it while swapping the battery. The system comprised with an AR glasses designed with a battery housing (1) embedded with the right temple of it, ensures accommodation of battery and other components involved in this system. Within the battery housing (1) consist of guided rail system (2) facilitates easy and accurate battery insertion, followed by a swappable battery module (3) which can be attached firmly within the temple of the glasses using magnetic lockingn1ei:hanism (<="" tr="">

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :28/03/2025

(21) Application No.202541029697 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART RING-BASED INPUT DEVICE FOR AUGMENTED REALITY GLASSES WITH INTEGRATED CAMERA AND GESTURES CONTROL

(51) International classification :G06F0003010000, G06F0003048830, A61H0039000000, G10L0015260000, G06F0003048800
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT The titled invention discloses a "smart ring-based input device for augmented reality glasses with integrated camera and gesture control' enhance precision controlling and user interaction with AR glasses, making digital experience more immersive while addressing concerns regarding security and ease of use. The device comprises of a 10 smart ring housing (1) designed for comfort and extended wearable device allows component integrations for seamless performance of the ring, the touch-sensitive pad (2) utilizes capacitive sensors allows swiping, pinching and tapping by user, the gesture-detection sensors (3) involving accelerometer and gyroscope sensors for tracking and recognizing the hand and finger motions such as flicks, rotation and 15 swipes, a microphone (4) enabled for issuing voice inputs to control AR glasses such as navigation or object manipulation and helps in addressing privacy concerns, a miniature camera (5) for capturing video and environment mapping that is enabled with manually operable shutter (6) to provide a privacy conscious method of handling video data, a bluetooth module (7) provides wireless connection made with AR glasses 20 ensures seamless communication regarding transferring· of data after processing . them, a rechargeable battery (8) designed to last throughout the day with minimal power consumption due to the use of low energy sensors and components, a magnetic charging port (9) to recharge the battery in a· wireless mode enhances convenient recharge without needing physical connectors. This invention can be applicable across 25 various domains, including professional, educational and consumer settings.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029698 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART ENERGY METER WITH AUTOMATED PAYMENT AND DISCONNECTION SYSTEM

(51) International classification	:G01D0004000000, G06Q0020100000, G01R0022060000, G06Q0030040000, G07F0009000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT This invention relates to a smart energy meter with automated payment ar:td disconnection system. This invention typically includes a smart meter unit (1), a real- time display (2) ,a communication module (3) ,a microcontroller (4) ,an automated 10 disconnection/reconnection mechanism (5) ,a secure data storage (6);a banklaadhaar integration module (7) ,a mobile application (8), an utility server/cloud platform (9) ,a payment gateway (10) ,a tamper detection sensor (11). This invention enhances energy management through automated payments and disconnections, improving . efficiency, reducing costs, and increasing convenience for both consumers and 15 utilities. This invention finds application in automating energy billing, payment, and service management for residential, commercial, and industrial settings, enhancing smart grid functionalities.

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2025

(21) Application No.202541029798 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART HOME POWER MANAGEMENT SYSTEM UTILIZING WIRELESS SENSOR NETWORK FOR REAL TIME MONITORING

(51) International classification	:A61B0005000000, G06N0020000000, H04W0084180000, G05B0015020000, H04Q0009000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The development of a smart home power management system utilizing a wireless sensor network (WSN) for real-time monitoring and control. The system employs a network of low-cost, strategically placed sensors to collect granular data on energy consumption at the appliance and circuit level, as well as environmental factors like temperature and occupancy. This data is transmitted wirelessly to a central hub for processing and analysis, providing users with real-time insights into their energy usage through a user-friendly interface. Beyond simple monitoring, the system implements intelligent automation strategies, leveraging AI and machine learning algorithms to identify energy waste, predict future consumption, and proactively adjust settings for optimal efficiency. This includes features like automated lighting control, smart thermostat adjustments, and appliance scheduling. The project also addresses key considerations such as system cost, scalability, security, and integration with existing smart home platforms. The anticipated outcome is a cost-effective and user-friendly solution that empowers homeowners to reduce their energy consumption, lower their utility bills, and contribute to a more sustainable environment.

No. of Pages : 14 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2025
(21) Application No.202541030748 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : UNIVERSAL CODE

(51) International classification :G06V0040120000, G06F0021300000, G06V0040100000, G07F0007100000, G06V0040140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Conventional personal identification methods (ID, password, authorization certificate, etc.) entail various issues, including forgery or loss. Technological advances and the diffusion across industries have enhanced convenience; however, privacy risks due to security attacks are increasing. Hence, personal identification based on biometrics such as the face, iris, fingerprints, and veins has been used widely. However, biometric information including faces and fingerprints is difficult to apply in industries requiring high-level security, owing to tampering or forgery risks and recognition errors. This invention proposes a personal identification technique based on Coccyx with Artificial Intelligence.

No. of Pages : 26 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2025
(21) Application No.202541030916 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FORMULATION AND EVALUATION OF POLYMERIC MICELLES OF TELMISARTAN

(51) International classification :A61K0009107000, A61P0009120000, A61K0031418400, A61K0009510000, A61P0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
FORMULATION AND EVALUATION OF POLYMERIC MICELLES OF TELMISARTAN Telmisartan, an angiotensin II receptor antagonist, acts by relaxing the blood vessels and 5 10 15 increases blood supply to the heart, and lowers blood pressure 1. The drug has very poor water solubility and is a substrate of p-gp efflux transporter. It has a negative caco2 permeability as reported1. These contribute to the poor oral bioavailability of conventional commercial products. According to reports, biliary excretion results in the majority of the injected dose (>97%) being removed intact in faeces. Telmisartan's absolute bioavailability is dose dependent, 40 mg of the drug has a 40% bioavailability, while 160 mg of the drug has a 58% bioavailability2. The bioavailability of oral telmisartan is not significantly affected by food 3. Therefore, a carrier that can increase the absorption of the drug can overcome the problems associated with its bioavailability. The present study focuses on the development of polymeric micelles of telmisartan that can enhance the drug solubility in the gastrointestinal milieu, as well as can withstand dissociation and drug discharge upon oral administration and facilitate the transport of entrapped Telmisartan through the biological membrane. FIG.1

No. of Pages : 17 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2025
(21) Application No.202541031149 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR REAL-TIME TRAFFIC VIOLATION DETECTION

(51) International classification :G08G0001017000, G06N0003080000, G06V0010820000, G06V0010764000, G06T0007246000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
TITLE: A SYSTEM FOR REAL-TIME TRAFFIC VIOLATION DETECTION APPLICANT: PES UNIVERSITY ABSTRACT The present invention discloses a real-time traffic violation detection system for real-time detection of Reckless Driving, Hit-and-Run and Footpath Riding. The invention presents a novel approach to traffic violation detection through a multi-stage processing pipeline incorporating: 1. Enhanced Object Detection: ● SAHI-enhanced YOLOv8x model for improved detection accuracy ● Custom-trained YOLO models for Indian traffic scenarios ● GPU (Graphics Processing Unit)optimized processing for real-time performance 2. Advanced Object Tracking: ● BYTEtrack implementation for robust object tracking ● Multi-object tracking in dense traffic scenarios. 3. Specialized Violation Detection: ● SVM-based classifier trained on various vehicular trajectories for effective detection of reckless driving. ● Custom-trained YOLOv8x-seg segmentation model for detecting and segmenting footpaths to effectively flag perpetrators of footpath riding. ● Custom-trained YOLOv8x object detection model for detecting vehicles in all weather and lighting conditions in real time. ● Custom-trained YOLOv8x object detection model for detecting road accidents in all weather and lighting conditions in real time.

No. of Pages : 19 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/03/2025
(21) Application No.202541031155 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Multimodal device for laser speckle contrast imaging, digital holographic microscopy, and bright field microscopy

(51) International classification :G03H0001000000, G03H0001040000, G06T0007000000, A61B0005026000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT MULTIMODAL DEVICE FOR LASER SPECKLE CONTRAST IMAGING, DIGITAL HOLOGRAPHIC MICROSCOPY, AND BRIGHT FIELD MICROSCOPY According to an exemplary aspect of the disclosed embodiment, a multimodal imaging system capable of performing a combination of laser speckle contrast imaging (LSCI), off-axis digital holographic microscopy (DHM) and bright field imaging with minimum sample preparations and mechanical rearrangements is provided. The LSCI and the off-axis DHM can be performed simultaneously or separately in addition to the bright field imaging and in-line DHM.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :29/03/2025

(21) Application No.202541031207 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Design of a Predictive Memory Allocator for Optimizing Memory Usage in Programming Languages

(51) International classification :G06F 9/50, G06N 20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention introduces a predictive memory allocator that leverages machine learning to forecast an application's memory requirements, enabling optimized allocation and reducing fragmentation. By dynamically adjusting allocation strategies based on predictive models, the allocator enhances memory utilization, minimizes allocation overhead, and improves application performance. Additionally, it integrates with garbage collection mechanisms to proactively manage memory deallocation, ensuring efficient resource utilization. The system continuously learns and adapts to runtime behavioral changes, maintaining optimal memory management under varying conditions.

No. of Pages : 6 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :29/03/2025

(21) Application No.202541031238 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Synthetic Process for Novel Quinazoline Embedded Heterocyclic Molecules with Enhanced Cytotoxic Activity Against MDA-MB-231 Cells

(51) International classification :A61P0035000000, A61K0031517000, G06T0007000000, C12Q0001180000, A61K0047320000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
This study aimed to develop an efficient and innovative therapeutic strategy to overcome challenges in cancer treatment. Recognizing their potential as promising anticancer agents, the focus was on establishing a concise and reliable synthetic pathway. The successful synthesis of the target compounds was accomplished and validated through spectral characterization, including FTIR and NMR, confirming their structural integrity and composition. In vitro evaluation of the synthesized derivatives revealed notable anticancer activity, with compound (7c) exhibiting significant cytotoxicity against the MDA-MB-231 breast cancer cell line, reflected by an IC50 value 8.8 ± 1.2 µg/mL. This promising activity highlights the potential of this novel class of quinazoline derivatives as lead compounds. Further studies are necessary to elucidate their mechanisms of action and optimize their potency and specificity. These findings provide a strong foundation for the development of novel anticancer therapeutic approaches.

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/03/2025

(21) Application No.202541031273 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : "A Systematic approach of rheology and mechanical properties of CNT reinforcement's on epoxy adhesive substrate for surface characterization of various dead corners and joints"

(51) International classification	:B82Y0030000000, B82Y0040000000, B82Y0005000000, C08K0003040000, C08K0007060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Carbon nanotubes (CNT), a new form of pure carbon have investigated in the present research to address the importance of nano reinforcements many researchers are looking into the possibility of using carbon nanotubes (CNTs) as nano reinforcements of the polymer matrix in the production of conventional laminate composites due to the current need for new high-performance polymer composites for a variety of applications in various industrial sectors. Because of their distinct mechanical, surface, and multifunctional qualities as well as their robust interactions with the hosting matrix, the nano-reinforcement plays a great future in the upcoming research era. The carbon fiber reinforced epoxy is a growing focus on the potential effects of nanoparticle reinforcement to further augment the mechanical and rheological properties of new materials. To pursued the use of carbon nanotubes (CNTs) as reinforcing agents in thermoplastics and thermosetting-based polymer composites persistently. Despite the vast amount of ex

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2025
(21) Application No.202541031280 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : System for Burn Treatment

(51) International classification :F04B0049060000, F25B0049020000, A61J0007000000, A61H0033060000, B29C0065000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
System for burn treatment is described herein. The system includes cryo module (10) and hydro module (20). The cryo module comprises an air compressor (101), a plurality of controlled switches (102), a vertex tube (103), a nozzle for vertex tube (104), a medicine dispenser (105), a hot air outlet (106), and a cold air outlet (107). The hydro module (20) comprises a water source (201), a plurality of controlled switches (202), a steam generator (203), a water pipe (204), a nozzle for water pipe (205), a hot plate (206), a hot water outlet (207), a cold water outlet (208), and a steam outlet (209). The air compressor (101) has capacity of 10-50 L/min.

No. of Pages : 23 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/03/2025

(21) Application No.202541031284 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Integrated Traffic Signal and Barricade System for Accident Prevention, Red Signal-Activated Barricade System to Prevent Traffic Signal Violations

(51) International classification :G08G0001095000, G08G0001017000, G08G0001070000, H02J0009060000, G08G0001096700

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automated system for controlling barricades at traffic signal-controlled intersections to reduce accidents caused by red light violations. The system integrates traffic signal controllers with an automatic barricade mechanism, which lowers barricades across the intersection when the traffic signal turns red. This prevents vehicles from crossing the intersection during red light conditions, thereby reducing the risk of accidents. The system includes a control unit that processes the traffic signal information, a sensor system to verify the correct positioning of the barricades, and a backup power supply for continuous operation during power outages. The invention provides an effective and low-cost solution to improve road safety by preventing traffic signal violations and enhancing overall traffic management at intersections.

No. of Pages : 9 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/03/2025

(21) Application No.202541031295 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Automated Fraud Detection in Financial Transactions Using Machine Learning Techniques

(51) International classification :G06Q 20/38, G06Q 40/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention introduces an advanced automated system designed to identify fraudulent activities in financial transactions through the application of machine learning techniques. The emergence of digital banking and e-commerce has positioned fraud detection as a significant challenge for financial institutions. This invention presents a modular system that combines data collection, preprocessing, real-time analysis, and machine learning to improve fraud detection capabilities. The system functions by collecting transaction data from various sources, ensuring it is preprocessed for consistency and relevance, and utilising trained machine learning models—such as supervised, unsupervised, and deep learning algorithms—to identify anomalous patterns indicative of fraud. An analysis engine operates in real-time, consistently observing incoming transactions, allocating fraud scores, and activating alerts when a score surpasses a set threshold. These notifications are directed to appropriate individuals or automated systems for prompt action. Utilising sophisticated methods such as neural networks and support vector machines guarantees a significant level of precision, reducing false positives and facilitating proactive measures against fraud. An intuitive interface facilitates configuration, report generation, and trend analysis, ensuring the system is flexible and straightforward to handle. The system facilitates regular model retraining to adjust to changing fraudulent behaviours, thereby maintaining strong and scalable security measures. This invention utilises advanced machine learning technologies to create a thorough, real-time fraud detection system that markedly decreases financial risk, boosts customer confidence, and enhances operational efficiency within financial environments.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2025
(21) Application No.202541031301 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : LEG STAND FOR THE TREATMENT OF CHRONIC VENOUS INSUFFICIENCY

(51) International classification :A61H0009000000, A61P0007020000, A61H0023020000, A61H0001000000, G11B0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
LEG STAND FOR THE TREATMENT OF CHRONIC VENOUS INSUFFICIENCY A physical therapeutic apparatus (100) and method are disclosed for the treatment of venous insufficiency. The apparatus (100), as shown in FIG. 1, comprises a tripod support structure (102) having a predetermined height, an upper platform (104) covered with a thick fabric material for supporting a user's lower leg, a spring mechanism (106) imparting controlled oscillations to the platform, and a battery-operated vibratory unit (108) providing pulsatile stimulation. The tripod support structure (102) helps to elevate the leg to position the heel at the level of the umbilicus, counteracting gravitational forces. These features reduce venous pooling, alleviate edema, prevent cellular decay and subsequent infection, and ultimately promote healing while reducing the risk of deep vein thrombosis (DVT).

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2025
(21) Application No.202541031302 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED SYSTEM AND METHOD FOR REAL-TIME MULTI-USER MULTILINGUAL AUDIO TRANSLATION FOR VIDEO CONTENT

(51) International classification :G06F 40/40, G06F 40/58, G10L 13/00, G10L 15/26
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The present invention relates to an AI-based system and method for real-time, multi-user, multilingual audio translation of video content. The system employs artificial intelligence (AI)-driven Speech-to-Text (STT) processing, Neural Machine Translation (NMT), and Text-to-Speech (TTS) synthesis to provide synchronized multilingual audio streams to multiple users simultaneously. Each user can select a preferred language via a smart TV, mobile app, or computing device, receiving real-time translated audio through wireless headphones, smart speakers, or mobile applications. A multi-channel audio distribution system ensures seamless transmission via Bluetooth, Wi-Fi, and RF communication. AI-powered latency optimization and real-time error-handling mechanisms enable accurate synchronization with video playback, ensuring a natural listening experience. The system is applicable to home entertainment, OTTs, theatres, live events, corporate meetings, conferences, and educational institutions and etc.., allowing multilingual audiences to experience personalized content without language barriers.

No. of Pages : 17 No. of Claims : 15

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :30/03/2025

(21) Application No.202541031349 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ANALYSIS OF VARIOUS INVESTMENT AVENUES WITH SPECIAL REFERENCE TO MUTUAL FUNDS

(51) International classification :G06Q 40/00, G06Q 40/06, G06N 20/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an AI-driven investment analysis system that evaluates various investment avenues, with a special focus on mutual funds. The system leverages machine learning, big data analytics, and predictive modeling to assess historical performance, risk factors, and market trends, providing personalized investment recommendations. It incorporates real-time portfolio monitoring, automated asset allocation, and ESG-based investment strategies to optimize financial decision-making. The invention also features a cloud-based advisory platform with interactive simulations and AI-driven insights, enabling investors to make data-driven investment choices while aligning with their financial goals and risk tolerance.

No. of Pages : 20 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/03/2025

(21) Application No.202541031401 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Blockchain-Integrated Multi-Factor Authentication for Stock Market Transactions

(51) International classification :G06F21/60, G06Q40/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
A blockchain-integrated multi-factor authentication (BI-MFA) system for securing stock market transactions is disclosed. The system comprises a user identity management module that generates cryptographic authentication credentials using asymmetric encryption, storing public keys on a blockchain while securing private keys on user devices or hardware security modules (HSMs). Authentication is verified using at least two factors, including biometrics, one-time passwords (OTPs), cryptographic keys, or behavioral authentication. A decentralized authentication validation mechanism employs blockchain nodes and smart contracts for consensus-based verification. Anomaly detection powered by artificial intelligence (AI) and machine learning (ML) monitors authentication patterns to detect security threats. A smart contract-based enforcement module dynamically applies authentication policies based on transaction risk levels. Authentication attempts and security breaches are immutably recorded on the blockchain for compliance and fraud prevention. The system eliminates centralized authentication vulnerabilities, ensuring enhanced security and regulatory compliance in stock market transactions.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :30/03/2025

(21) Application No.202541031408 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED VEHICLE-TO-GRID INTEGRATION SYSTEM FOR OPTIMIZING BIDIRECTIONAL POWER FLOW EFFICIENCY AND METHOD EMPLOYED THEREOF

(51) International classification :B60L0055000000, H02J0003320000, G06Q0050060000, B60L0053630000, H02J0003380000

(86) International Application No :NA
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(87) International Publication No : NA

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Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards an AI-based vehicle-to-grid integration system for optimizing bidirectional power flow efficiency and method employed thereof. This system facilitates bidirectional power flow between the electric vehicles (EVs) and the power grid by utilizing real-time data from various components connected to an AI-based Energy Management System (EMS). These components include bidirectional inverters, smart meters, the vehicles themselves, and grid communication interfaces. The system includes integrated features such as renewable energy sources, energy storage systems, demand response controllers, cybersecurity, and predictive maintenance systems. This AI-based Vehicle-to-Grid (V2G) Integration System enhances grid stability and efficiency, while supporting energy usage and storage with vehicles to meet the growing demand for power. The AI-based energy management system (EMS) is configured to use artificial intelligence algorithms to monitor, predict, and optimize energy usage and storage, ensuring efficient bidirectional power flow between electric vehicles (EVs) and the power grid. Fig. 1.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202541031479 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI and Blockchain-Based Digital Marketing Platform for Promoting ESG-Oriented Healthcare Awareness and Access

(51) International classification :G06Q0010063900, G06Q0030025100, H04L0009000000, H04L0009320000, G10L0015220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT AI and Blockchain-Based Digital Marketing Platform for Promoting ESG-Oriented Healthcare Awareness and Access This invention proposes an AI and Blockchain-Based Digital Marketing Platform aimed at enhancing healthcare awareness and access while adhering to Environmental, Social, and Governance (ESG) principles. The platform leverages artificial intelligence for personalized health campaigns, blockchain for data transparency, and eco-friendly strategies to drive sustainable healthcare practices. Key features include geo-targeting for underserved regions, gamification for healthcare literacy, incentive-based ecosystems, and collaborative ESG partnerships. The system ensures inclusivity, credibility, and environmental sustainability while promoting global health equity and effective healthcare delivery.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202541031557 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A System for Personalized Curriculum Mapping and Adaptive Learning in a Digital Educational Platform

(51) International classification :G06Q 50/20, G09B 7/04
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT: Title: A System for Personalized Curriculum Mapping and Adaptive Learning in a Digital Educational Platform The present disclosure proposes a system (100) that customizes educational content, evaluates learner progress, and provides continuous learning plan modifications based on individual performance metrics. The system (100) for personalized curriculum mapping and adaptive learning in a digital educational platform comprises a computing device (102) having a processor (104) and a memory (106) for storing one or more instructions executable by the processor (104). The processor (104) is configured to execute plurality of modules (108) for personalized curriculum mapping and adaptive learning in a digital educational platform. The proposed system (100) customizes educational content, evaluates learner progress, and provides continuous learning plan modifications based on individual performance metrics. The proposed system (100) associates learning objectives with relevant course resources, thereby ensuring a well-defined and progressive learning structure.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031560 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Method for Evaluating Thermal Stability of Concrete Using Thermogravimetric Analysis

(51) International classification :G01N0005040000, C04B0028040000, G03F0007000000, C23C0014060000, C04B0111200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT: Title: A Method for Evaluating Thermal Stability of Concrete Using Thermogravimetric Analysis The present disclosure proposes a method that evaluates the thermal stability of concrete using a thermogravimetric analyzer to assess phase changes, microstructural alterations, and mechanical properties for enhanced fire resistance and durability. The method for preparing first concrete specimens (112) and second concrete specimens (114) using a first composition (100) and a second composition (102), respectively. The first composition (100) is standard concrete (M30), and the second composition (102) is high-strength concrete (M90). The method studies microstructural alterations in concrete due to high temperatures, which include pore structure changes and cracking patterns, using thermogravimetric analyzer. The method enhances the understanding of how supplementary cementitious materials (105), such as micro-silica, influence the thermal stability of high-strength concrete, leading to improved material formulations when exposed to thermal cycles ranges between 100°C and 400°C.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031561 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Method for Evaluating and Analysing the Performance of Heat-Affected Reinforced Concrete Beams

(51) International classification :G01N0029070000, G01K0003040000, G01N0017000000, C08J0005180000, G01K0011120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: A Method for Evaluating and Analysing the Performance of Heat-Affected Reinforced Concrete Beams The present disclosure proposes a method evaluating the performance and structural integrity of reinforced concrete beams exposed to high temperatures, thereby assessing the effects of thermal exposure on the mechanical properties of reinforced concrete beams, including compressive strength, surface cracking, pulse velocity, and other related parameters. The proposed method demonstrates heat-affected reinforced concrete beams emerges to 27.27 percent increase in compressive strength at 150 °C, thereby indicating the material to be handled moderate heat exposure effectively without significant strength degradation. The proposed method offers valuable insight into the thermal limits of reinforced concrete beams, thereby predicting the behaviour of concrete under fire or high-temperature conditions, with the maximum strength loss occurring at 700 °C. The proposed method identifies the concrete maintains good quality up to 250 °C, with a drop in quality observed beyond this threshold based on pulse velocity testing.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031604 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS OF PREPARATION OF REVITALIZING AND BRIGHTENING FACE PACK FOR A RADIANT GLOW

(51) International classification :G06Q0050200000, A61Q0019000000, D06F0058200000, A61Q0019080000, A61K0035644000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
TITLE: A PROCESS OF PREPARATION OF REVITALIZING AND BRIGHTENING FACE PACK FOR A RADIANT GLOW APPLICANT: 1. MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH 2. MEENAKSHI AMMAL DENTAL COLLEGE AND HOSPITAL ABSTRACT The present invention discloses a process of preparation of revitalizing and brightening face pack for a radiant glow of skin comprises of following steps; a. adding honey, rose water, lemon juice and coffee powder and stirring to form a uniform paste; b. packing the uniform paste in an aluminum pouch and sealing followed by storing in a refrigerator to form revitalizing and brightening face pack. The present invention also discloses a revitalizing and brightening face pack for a radiant glow of skin prepared by process as described above.

No. of Pages : 18 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031605 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS OF PREPARATION OF EDIBLE INK FROM PLANT BASED WASTE BIOMASS FOR USE IN PEN OR PRINTERS

(51) International classification :C13K0001020000, A23G0003340000, A23L0005430000, C10L0005440000, G06Q0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
TITLE: A PROCESS OF PREPARATION OF EDIBLE INK FROM PLANT BASED WASTE BIOMASS FOR USE IN PEN OR PRINTERS APPLICANT: MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH ABSTRACT The present invention discloses a process of preparation of edible ink from plant based waste biomass for use in pen or printers comprises of following steps; a. grinding waste biomass of grape pomace with sorbitol followed by filtration to form grape pomace extract; b. boiling finely ground sugarcane bagasse under reflux in 0.5 N sodium hydroxide solution and treatment at 100°C using 5 g/l sodium chlorite followed by filtration to obtain residue and grinding the residue with sorbitol followed by filtration to form cellulose extract; c. grinding rice husk powder with sorbitol followed by filtration to form rice husk extract; d. grinding moringa leaves biomass powder with sorbitol followed by filtration to form moringa leaves extract; e. mixing the grape pomace extract, cellulose extract, rice husk extract and moringa leaves extract to form edible ink from plant based waste biomass.

No. of Pages : 17 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031606 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A PROCESS OF PREPARATION OF HERBAL MOUTH FRESHENER FOR ORAL FRESHNESS AND ORAL HYGIENE

(51) International classification :A61K0036610000, A61Q0011000000, A01N0065220000, G06Q0050200000, A61K0036530000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
TITLE: A PROCESS OF PREPARATION OF HERBAL MOUTH FRESHENER FOR ORAL FRESHNESS AND ORAL HYGIENE APPLICANT: 1. MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH 2. MEENAKSHI AMMAL DENTAL COLLEGE AND HOSPITAL ABSTRACT The present invention discloses a process of preparation of herbal mouth freshener for oral freshness and oral hygiene comprises of following steps; a. adding dehydrated ginger powder in ethanol and subjecting to microwave radiation followed by filtration to form filtrate of gingerol; b. subjecting cloves to stem distillation to obtain clove oil; c. subjecting cardamom to stem distillation to obtain cardamom oil; d. subjecting leaves of Thymus vulgaris to stem distillation to obtain thyme oil; e. mixing the gingerol, clove oil, cardamom oil, and thyme oil along with powdered sea salt and honey to form herbal mouth freshener. The present invention also discloses an herbal mouth freshener for oral freshness and oral hygiene prepared by the process as described above.

No. of Pages : 19 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031611 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A DEVICE FOR ENVISAGING LUNG CANCER

(51) International classification :G06Q0030025100, C12Q0001688600, G06V0020690000, H01L0021020000, A61B0005024000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
A device (100) for envisaging lung cancer and categorising each subtype of lung cancer from histopathological images, is disclosed. Said device (100) broadly comprises: a feature extraction module (102), a hypergraph construction module (104), and a classification module (106). The device (100) is embedded (or installed) on a processing member. The disclosed device (100) offers at least the following advantages: is simple in construction; is cost-effective; is efficient; is non-invasive device with high accuracy and precision; and enables personalised treatment strategies tailored to the specific characteristics of each lung cancer subtype.

No. of Pages : 22 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031612 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NORMALLY-OFF HIGH ELECTRON MOBILITY TRANSISTOR AND METHOD OF FABRICATION THEREOF

(51) International classification :H01L0029778000, H01L0029660000, H01L0029200000, H01L0029786000, H01L0029100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
A normally-OFF high electron mobility transistor and method of fabrication thereof, are disclosed. Said HEMT broadly comprises: a first layer (1); a second layer (2); a third layer (3); a fourth layer (4); a fifth layer (5); and a sixth layer (6). The disclosed HEMT offers at least the following advantages: is cost-effective; is simple in fabrication without complex doping procedures; improved yield; enhanced electron depletion; and/or improved device reliability.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202541031614 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A NANOEMULSION FOR WOUND HEALING AND METHOD OF SYNTHESIS THEREOF

(51) International classification :A61K0036428000, A61K0009107000, A61Q0019000000, A61K0047260000, A61K0009000000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A nanoemulsion, for wound healing, and method of synthesis thereof, are disclosed. Said nanoemulsion broadly comprises: a snake gourd seeds extract; an unripe banana peels extract; polysorbate 80 as a surfactant; isopropyl alcohol as a co-surfactant; and water. The disclosed nanoemulsion offers at least the following synergistic advantages and effects: improved wound healing properties (or wound healing properties that are comparable to those of a market standard); is non-toxic; facilitates conversion of organic wastes, into value-added products; and/or facilitates transitioning, towards a circular economy.

No. of Pages : 14 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202541031656 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR SECURE DIGITAL SIGNATURES GENERATION USING ADVANCED CRYPTOGRAPHIC TECHNIQUES AND POST-QUANTUM SECURITY

(51) International classification :H04L0009320000, H04L0009300000, H04L0009080000, H04L0009400000, H04L0009000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Exemplary embodiments of the present disclosure are directed towards a system and method for secure digital signature generation and verification using advanced cryptographic techniques and post-quantum security. The system comprises a computing device includes a processor and a signature generation module configured to process input data, generate a hash value, select a private key, and generate a digital signature using advanced cryptographic algorithms such as Elliptic Curve Cryptography (ECC), RSA, or Post-Quantum Cryptography (PQC). Metadata, including cryptographic parameters and timestamps, is associated with the signature. The digital signature, along with the original data and metadata, is transmitted to the server for verification. The server comprises a signature verification module configured to retrieve the corresponding public key, verify the authenticity and integrity of the data by recalculating the hash and decrypting the signature, and determine the validity of the digital signature, thereby ensuring secure and efficient digital transactions. Fig. 1

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202541031737 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR PLASMON INDUCED PHOTOLUMINESCENCE ENHANCEMENT IN BORON NITRIDE QUANTUM DOTS

(51) International classification	:B82Y0040000000, B82Y0020000000, B82Y0030000000, C01B0021064000, G02F0001133570
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Method for plasmon induced photoluminescence enhancement in the Boron nitride quantum dots. The quantum dots are synthesized by hydrothermal method using boric acid (0.16 M), and melamine (0.019 M) as the boron, and nitrogen sources respectively. The gold nanorods were synthesized by the seed-mediated growth. For the hybrid preparation of BNQDs and gold nanorods, 1 mg of as-synthesized BNQDs was dispersed in 1 ml of distilled water, further, to this suspension, the 100 µL of as-synthesized gold nanorods was added, to form the BNQDs/GNR hybrid [FIG. 1].

No. of Pages : 12 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031738 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GOLD NANORODS BASED PLASMONIC NANOANTENNA FOR OPTOELECTRONICS AND QUANTUM TECHNOLOGY

(51) International classification :B82Y0020000000, B82Y0030000000, G02B0005000000, G01N0021650000, H10K0085300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Gold nanorods based plasmonic nanoantenna for optoelectronics and quantum technology. The gold nanorods are of cylindrical nano-rod shaped nanoparticles with a ratio of 6:1 (length/radius). The optical absorption spectra for the as-synthesized gold nanorods in the visible region is between 500 and 800 nm. Theoretical simulation (DDSCAT) utilizes the extinction spectra in the visible range to determine the field enhancement attributed to metal nanoparticles [FIG. 1].

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202541031850 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTI BRANCH NEEM SEED HARVESTING MACHINE

(51) International classification :A01D0046260000, A01N0065260000, A61K0036580000, H04B0007080000, A01D0046280000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Multi branch neem seed harvesting machine. A gear-based multi branch neem fruit harvester (100) uses the differential unit (110) which has a gear ratio of 1:2 wherein the differential unit (110) is connected to a tractor power take-off using a universal joint (120). At both ends of the differential unit (110), weights are attached along with the pulleys so that the rotary motion of the differential unit (110) will be converted as the push-pull action. A rope arrangement (130) is made from the pulleys to the tree branch so that it shakes the respective branch and the neem fruits will fall on the ground [FIG. 1].

No. of Pages : 14 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541031876 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A OXINDOLE DERIVATIVES AND PREPARATION THEREOF

(51) International classification	:A61P0035000000, C07D0403120000, C07D0513040000, C07D0209340000, C07D0413040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present disclosure relates to an anti-cancer oxindole derivative, its solvate, its stereoisomer, or a pharmaceutically acceptable salt thereof. Also, the present disclosure relates to the process for preparing oxindole derivatives. The present process is eco-friendly and provides high yields and pure compounds. Further, the present disclosure provides a compound with good binding affinity to the target protein and is endowed with good In-vitro anti- cancer activity against MCF-7 cell line and HT-29 cell line with less toxicity.

No. of Pages : 23 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202541031877 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DUAL RENEWABLE ENERGY SYSTEM: SOLAR AND PELTIER-BASED BATTERY CHARGING

(51) International classification :H01M10/46, H02J7/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The increasing need for renewable energy alternatives has spurred innovative methods of harnessing environmental energy to energize devices. This project offers a hybrid energy harvesting system that combines solar energy and thermoelectric generation. It uses a solar panel to capture sunlight and convert it into electricity, and a thermoelectric device generates energy from thermal changes. The energy collected from both sources is stored in a battery, which holds excess power for later use. The system is optimized to maximize power flow, track energy levels, and provide efficient operation. This method increases the development of sustainable energy solutions by combining the two renewable energy sources to form a flexible and independent system that can provide energy in off-grid or in the power plants. The system includes an LCD screen that displays real-time data by including the percentage of battery and the amount of solar energy available. So, users can keep track of performance in an easy manner. Once charged to a required level so the stored energy can be utilized to various devices or systems. It operates independently by constant charging and the stored energy.

No. of Pages : 14 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202541031893 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Dynamic Resource Allocation System for Mitigating Malicious Activities and Optimizing Energy Consumption in Cloud Operations

(51) International classification :H04L 47/00, H04L 47/83
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract The invention described in this invention is a dynamic resource allocation system, which is aimed at improving the security and energy aspects of the cloud operations. The system draws from a more innovative strategy using resource control that fluctuates in the cloud in order to counteraction of threats like cyber attacks, intrusions and susceptibilities. The second aspect is that security monitoring is combined with predicting and optimizing the energy utilization to utilize the cloud resources in a way that is economical with energy when carrying out critical analytical operations. The dynamic management of the cloud resources is done using predictive algorithms based on intelligent estimation of the workloads that the cloud is going to have in the upcoming times, it also checks for any abnormal working and takes necessary arrangements to distribute the resources. The solution to the above problems means that CSPs can reduce operational costs, improve services availability, and ensure the reliability of cloud systems by responding to security threats and optimizing the usage of energy. This invention effectively responds to the major issues that current cloud systems present in term securing, powering efficiently, and performing at high level in the upcoming generation of the cloud computing.
Keywords: Dynamic Resource Allocation, Cloud Security, Energy Efficiency, Malicious Activities, Machine Learning

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/03/2025

(21) Application No.202541032133 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Artificial intelligence-based data processing system for dynamic decision making

(51) International classification	:H04L0009400000, G06N0020000000, G06N0005045000, G06N0005040000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Artificial Intelligence-Based Data Processing System for Dynamic Decision-Making is an advanced AI-driven framework designed to analyze and process structured and unstructured data in real time. By integrating machine learning, deep learning, predictive modeling, NLP, IoT, and edge AI, the system enables seamless, adaptive decision-making across various industries such as finance, healthcare, industrial automation, and smart city management. It leverages real-time analytics, anomaly detection, and blockchain security to enhance efficiency, security, and transparency. The system continuously learns from new data patterns, improving accuracy and reducing human intervention. With the implementation of federated learning, XAI, and cybersecurity threat detection, the system ensures privacy, trust, and explainability in AI-driven decisions. This invention enhances operational efficiency by providing intelligent, automated, and data-driven decision-making, making it an essential tool for industries seeking to optimize processes, mitigate risks, and improve strategic outcomes.

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025

(21) Application No.202541032135 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Enhancing Energy Efficiency and Usage Optimization through Integration of Smart Remote Control with Electrical Appliances

(51) International classification	:H02J0013000000, G06Q0050060000, H02J0009060000, H04L0067125000, H04L0067120000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The proposed invention is a smart remote-controlled energy management system that integrates motion sensors, IoT technology, and mobile application connectivity to optimize electricity usage. Motion sensors detect human presence and transmit alerts to a mobile application, allowing remote switching of electrical appliances. The system incorporates two-way switches, ensuring both manual and digital control without disrupting traditional usage. IoT-enabled connectivity allows seamless communication between microcontrollers, relays, and a mobile interface for real-time monitoring. An error detection feature identifies faulty appliances, while an automated power failure alert system helps users detect and manage outages. The system is scalable, making it suitable for large buildings and institutional settings, with the capability to dynamically adjust appliance operations based on occupancy. By reducing unnecessary energy consumption, this invention promotes sustainability, lowers electricity costs, and minimizes carbon emissions, contributing to an eco-friendly energy management solution.

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :31/03/2025
(21) Application No.202541032146 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FlexiWork Hub: Empowering Students, Job Seekers, and Gig Workers Anytime, Anywhere

(51) International classification :G06Q0010063100, G06Q0050200000, G06Q0010105300, G06Q0030060100, G06Q0010020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A flexible job marketplace for students, unemployed individuals, and additional income earners, enabling them to work anywhere, anytime. It connects job seekers with opportunities in work-from-home, office-based, nearby, short-duration (2-hour), and part-time roles across sectors such as digital marketing, technology, health, tuition, online tuition, household chores, agriculture, counseling, hospital bystanders, daycare services, and sales. The platform also supports local shopkeepers and home bakers, linking them with a reliable workforce. With an AI-driven job-matching system, users can find jobs that fit their skills, schedule, and location, while employers can hire efficiently. The economic model includes freemium access, commission-based earnings, subscription plans, corporate partnerships, and on-demand booking fees. The platform ensures real-time demand-supply tracking, skill-based filtering, and dynamic pricing to enhance efficiency. By offering verified profiles, ratings, and review systems, it ensures a trustworthy and scalable employment ecosystem

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202541032297 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT Integrated Real-Time Monitoring Automation System for Dam

(51) International classification :G06T0007000000, G06N0003045000, G01N0021880000, G06Q0050100000, G06N0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
The Integrated Dam Automation System (100) is an advanced IoT-based solution designed to improve dam safety and efficiency by automating monitoring and control processes(101). It utilizes sensors to measure water level, rain, turbidity, temperature, and flow rate, with an Arduino microcontroller(107) processing real-time data. A servo motor-based gate control(105) system regulates water discharge automatically, preventing floods and ensuring optimal water management. The system also features an AI-powered crack detection module using OpenCV (206) and deep learning to assess structural integrity through image analysis. Alerts are sent via Telegram (205) to notify authorities of high water levels or cracks, enabling timely intervention. Additionally, cloud-based data storage (207) allows predictive maintenance and remote monitoring. This scalable, cost-effective system enhances dam management by integrating real-time monitoring, AI-driven safety assessment, and automated control mechanisms, reducing the risks of dam failures while ensuring environmental safety.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :01/04/2025

(21) Application No.202541032327 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A vacuum testing apparatus for small electric thrusters

(51) International classification	:F03H0001000000, G01M0015140000, B64G0007000000, G01F0001440000, F04B0041020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT Title: A vacuum testing apparatus for small electric thrusters The present invention relates to a vacuum testing apparatus for small electric thrusters, utilizing a venturi-based vacuum generation system. The system features a Venturi mechanism powered by compressed air from a storage tank to create a controlled low-pressure environment. An adjustable throat Venturi mechanism allows dynamic vacuum level regulation. An Arduino microcontroller monitors and controls system operations, while a thrust measurement system within the vacuum chamber evaluates thruster performance. A capacitor bank stabilizes power supply fluctuations to ensure steady operation. The vacuum chamber is connected to a suction tube that links to the Venturi mechanism for efficient vacuum generation. A data recorder logs key operational parameters, including vacuum pressure, airflow rates, and thrust measurements. Insulation supports provide thermal and electrical isolation for critical components. This apparatus offers a compact and efficient solution for testing small electric thrusters in a controlled vacuum environment.

No. of Pages : 10 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202541032378 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : REAL-TIME HEART DISEASE PREDICTION SYSTEM AND METHOD

(51) International classification :A61G0005100000, A61G0005040000, A61G0005120000, A61G0005140000, H02J0007000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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Filing Date :NA

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(57) Abstract :
Embodiments of the present disclosure relate to an electric powered-height adjustable wheelchair (100) for assisting disabled users and a method (400) for operating the same. The wheel chair (100) includes a structural frame (102) including wheels (120), an adjustable seat (106), a first set of linear actuators (108), a second set of linear actuators (110), a motor driver (130), a microcontroller (112) and an opening (114) on the adjustable seat (106). The first set of linear actuators (108) is placed at a front portion of a set of front legs (108-1) and a second set of linear actuators (110) is placed at a rear portion of a set of rear legs (110-1). The linear actuators (108, 110) are configured for adjusting the height and tilt of the seat (106). The microcontroller (112) is configured to allow the seat (106) to be tilted forward or backward for safe transfers of users.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025

(21) Application No.202541032383 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SafePass Alert System

(51) International classification	:G08G0001160000, B60Q0009000000, B60Q0001440000, G01S0013931000, B60W0050140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SafePass Alert System The SafePass Alert System is an advanced vehicle safety mechanism designed to prevent unsafe overtaking maneuvers by providing real-time warnings to following vehicles. The system utilizes distance-measuring sensors such as radar, LiDAR, or ultrasonic sensors to continuously monitor the gap between the host vehicle and the one ahead. A microcontroller processes this sensor data and determines whether the available distance is sufficient for a safe overtake. If the measured distance falls below a predefined safety threshold, a rear-mounted blinking red indicator is activated, signaling trailing vehicles to delay their overtaking attempt. This system functions automatically and in real time, eliminating the need for driver intervention. The visual warning mechanism ensures that trailing drivers receive clear and immediate alerts about potential overtaking hazards. Once the distance increases beyond the safety threshold, the indicator turns off, allowing normal driving conditions to resume. The system is designed to work effectively in various driving environments, including highways, urban roads, and single-lane routes, where overtaking judgments are crucial for road safety. The SafePass Alert System offers a proactive solution to reduce overtaking-related accidents and promote responsible driving behavior. Its integration with modern vehicles is seamless, and it can function as a standalone safety feature or as part of an advanced driver-assistance system (ADAS). By reducing human errors in overtaking maneuvers, this invention enhances overall traffic safety standards, making roads safer for all users.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032499 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Wireless Gesture Control Interface for Personal Computing Devices

(51) International classification :G06F0003010000, G06F0003034600, G06F0003030000, G06F0003038000, G06F0003023000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This project is about Human-Machine Interaction (HMI) and Embedded Systems, making gesture-control technology a reality. Employing an Arduino and ultrasonic sensors, it allows individuals to control computers easily in real time, making automation more intuitive and accessibility more convenient. By using simple hand gestures to replace the conventional input devices, it introduces new possibilities for a more natural and efficient means of controlling digital systems. The ability to develop more wearable technology, assistive interface, and intelligent automation can greatly impact areas in healthcare, information technology, industrial control, and gaming. By substituting conventional input devices with basic hand movements, it provides a more natural and intuitive means of interacting with computers, enhancing usability and productivity. Whether for individuals with mobility issues or anyone seeking a hands-free experience, this technology revolutionizes the manner in which we interact with digital systems in daily life.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032512 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IV monitoring system with wireless alerts, real- time level detection, and voice-guided notifications with cutoff

(51) International classification :G08B0021240000, A61M0005168000, G04F0003060000, H04L0047100000, A61B0017000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: The present invention is an IV monitoring system with wireless alerts, real- time level detection, and voice-guided notifications with cutoff, system wait for 3 minutes and if the stop button is not pressed within this period, the servo motor connected to the saline tube will activate, closing the flow to prevent any risk to the patient. System not stop transmission or reset the timer unless the stop button is pressed and when the stop button is pressed, the timer halts, data transmission stops, the servo motor opens the saline tube (if previously closed), and the system resets to standby mode, therein, ensures that both the timer and data transmission remain active until manually stopped, providing uninterrupted IV level monitoring and ensuring patient safety through automated flow control.

No. of Pages : 6 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :01/04/2025
(21) Application No.202541032525 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SSSV -AUTOCLAVABLE FLAVOUR RELEASING SUCTION TIP

(51) International classification :A61C0017080000, A61M0001000000, A61K0009000000, C12M0001000000, A61B0034200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention SSSV - Autoclavable Flavour Releasing Suction Tip is made of environment friendly reusable, autoclavable flexible grade VI medical silicon material. The suction tip is capable of holding the desired flavoring agent through a port covering the entire surface of the working end of the suction tip which is the outer wall of the suction tip, It will also have multiple vents to deliver the desired flavoring agent into the oral cavity/mouth during the dental surgery/treatment. Highlights of SSSV - Autoclavable Flavour Releasing Suction Tip are: • Reusable • Environmental friendly • Flexible • Autoclavable • Flavorant

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032599 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Crystallization process for selectively obtaining Needle, Plate and Block shaped crystal morphologies of Tadalafil

(51) International classification :C07D241/36, C07D241/36
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT Crystallization process for selectively obtaining Needle, Plate and Block shaped crystal morphologies of Tadalafil The present invention relates to a crystallization process for selectively obtaining Needle, Plate and Block shaped crystal morphologies of a PDE inhibitor.

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202541032603 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Intelligent CRM-Based Demand Forecasting and Inventory Optimization for Manufacturing Enterprises

(51) International classification	:G06Q10/00, G06Q10/087, G06Q10/0631
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
ABSTRACT OF THE INVENTION Title: Intelligent CRM-Based Demand Forecasting and Inventory Optimization for Manufacturing Enterprises The invention relates to a system and method for integrating customer relationship management (CRM) data with artificial intelligence/machine learning algorithms to forecast demand and optimize inventory levels in manufacturing enterprises. The system comprises CRM modules, AI/ML forecasting engines, inventory control systems, and analytics dashboards. It processes customer data and market trends to predict future demand, thereby enabling automated inventory adjustments and production scheduling. The present invention ensures better alignment of production with market demand, reduces operational inefficiencies, prevents stockouts and overstocking, and enhances decision-making for manufacturing enterprises.

No. of Pages : 18 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032647 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Compact MIMO Antenna System with Wide band Characteristics for WiFi 6E/X-Band Applications and Method Thereof

(51) International classification	:H01Q0001520000, H01Q0001240000, H01Q0021000000, H01Q0021280000, H01Q0007000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT Compact MIMO Antenna System with Wide band Characteristics for WiFi 6E/X-Band Applications and Method Thereof The present invention discloses a compact multiple-input multiple-output (MIMO) antenna system designed for WiFi 6E and X-band applications and method thereof. The disclosed antenna operates within the 6.2 GHz to 11.2 GHz range, offering high isolation without additional decoupling structures. The design features a four-port MIMO configuration with orthogonally placed modified circular radiating elements, fed through a co-planar waveguide (CPW) structure to ensure impedance matching and wideband performance. The antenna system achieves a minimum isolation of 20 dB, a gain range of 3.5 dB to 7 dB, and an envelope correlation coefficient (ECC) below 0.1, ensuring enhanced signal diversity. Surface current analysis confirms minimal mutual coupling, and measured results align with simulations, validating the antenna's efficiency. The instant invention provides a compact, high-performance solution for next-generation wireless communication, optimizing bandwidth, gain, and polarization diversity while maintaining a small footprint.

No. of Pages : 19 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202541032648 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A System for Generative AI Optimized Mechanical Component Design and its Manufacturing Method

(51) International classification	:G06F0030230000, B33Y0010000000, B33Y0080000000, B33Y0030000000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A System for Generative AI Optimized Mechanical Component Design and its Manufacturing Method The present invention relates to a system and method for generative AI-optimized mechanical component design and manufacturing. Traditional mechanical joint design methods rely on standardized geometries and empirical testing, leading to excessive material use, inefficient load distribution, and prolonged design cycles. These limitations restrict innovation and manufacturability, particularly for advanced manufacturing techniques like additive manufacturing. The present invention overcomes these challenges by integrating AI-driven generative design algorithms to optimize mechanical joint structures for strength-to-weight efficiency while minimizing material waste. The system iterates through thousands of configurations, validating structural integrity using finite element analysis (FEA). It ensures manufacturability by incorporating support-free 3D printing considerations and smooth transitional surfaces that reduce stress concentrations. The invention significantly accelerates design iteration, reduces production costs, and enhances durability, making it highly suitable for aerospace, automotive, and precision engineering applications. This AI-powered approach revolutionizes mechanical joint optimization by combining automation, material efficiency, and superior structural performance.

No. of Pages : 23 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032668 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Analyzing Land Cover Changes with Landsat Satellite Data: An Application to Ensemble Learning

(51) International classification :G06N0003045000, G06N0020000000, G06N0020200000, G06V0020100000, G06V0020130000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention introduces a novel system for land cover change detection, integrating Landsat satellite data, ensemble learning techniques, and automated change analysis to enhance accuracy and scalability in environmental monitoring. The system leverages machine learning and AI-driven classification models, including Random Forest (RF), Gradient Boosting (GBM), Support Vector Machines (SVM), and Convolutional Neural Networks (CNNs), to improve land cover classification precision while minimizing misclassification errors. A key innovation of this invention is the automated multi-temporal change detection framework, which compares classified satellite images over different time periods using pixel-based, object-based, and deep learning models. The system applies radiometric correction, cloud masking, feature selection, and dimensionality reduction (e.g., PCA) to optimize input data and ensure high-quality classification. By integrating bagging, boosting, and stacking ensemble learning methods, the invention achieves greater accuracy and robustness compared to conventional single-classifier approaches.Furthermore, the invention incorporates a self-learning AI mechanism that continuously updates its classification models based on newly acquired satellite data, ensuring adaptability and long-term accuracy improvements. The results are presented in an interactive GIS-based visualization platform, enabling policymakers, urban planners, and environmental researchers to analyze land cover transitions, deforestation trends, urban expansion, and climate-induced changes effectively.This fully automated, scalable, and high-precision system revolutionizes land cover change detection by integrating remote sensing, machine learning, and AI-driven analytics, making it a vital tool for sustainable environmental monitoring, urban planning, and climate resilience research.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032669 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI Based Dual Axis Solar Tracking System with Weather Sensor

(51) International classification :H02S0020320000, H02J0003380000, F24S0030452000, F24S0050200000, F24S0030000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention presents an AI-based dual-axis solar tracking system with weather sensor that optimizes energy production from solar panels by adjusting their angle and orientation in real-time based on weather conditions. The system uses advanced weather sensors and artificial intelligence algorithms to predict optimal panel positioning, resulting in improved energy production and reduced maintenance costs. The system is scalable, adaptable, and can be integrated with various types of solar panels and energy storage systems. Keywords:AI-based Solar Tracking, Dual-Axis Tracking, Weather Sensor, Solar Energy Optimization, Real-Time Adaptation, Machine Learning, Renewable Energy, Sustainable Energy, Energy Efficiency.

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(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032675 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Designing Smart Highways with Integrated IoT for Traffic Management.

(51) International classification	:G08G0001010000, G08G0001096700, H04L0067120000, G08G0001080000, G08G0001081000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Smart highways with integrated Internet of Things (IoT) technology offer a comprehensive solution to the growing challenges faced by traditional transportation systems. By incorporating advanced IoT sensors, connected infrastructure, and data analytics, these highways create a dynamic and responsive network that can adapt in real-time to changing traffic conditions, weather, and accidents. The integration of these technologies enables a more efficient flow of vehicles, reduces congestion, and enhances the overall driving experience. One of the most significant advantages of smart highways is the ability to optimize traffic flow through real-time data collection and analysis. IoT sensors embedded in the road surface and along highway corridors continuously monitor traffic volume, speed, and environmental factors such as weather conditions. This data feeds into an intelligent traffic management system that can adjust traffic signals, reroute vehicles, or provide warnings of potential hazards. This dynamic approach is a marked improvement over static traffic management systems that rely on fixed schedules or pre-determined timings, making the system more responsive and efficient. Furthermore, the smart highway infrastructure enables Vehicle-to-Infrastructure (V2I) communication, allowing vehicles to exchange information with road infrastructure such as traffic lights, road signs, and variable message boards. This interaction ensures that vehicles are informed of real-time conditions such as accidents, traffic delays, and changes in road status, which improves safety and enables drivers to make more informed decisions. This communication also plays a crucial role in the seamless integration of autonomous vehicles, which rely on constant communication with infrastructure to navigate safely and efficiently. The use of predictive analytics and machine learning on smart highways adds another layer of sophistication to traffic management. By analyzing historical traffic patterns and real-time data, the system can forecast potential traffic bottlenecks, accidents, or hazardous conditions.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032676 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Artificial Intelligence Model for Air Quality Prediction and Analysis

(51) International classification :G06N0003080000, G06N0020000000, G06N0005040000, G16H0050200000, G06Q0010040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention introduces an advanced Artificial Intelligence model for air quality prediction and analysis, designed to integrate and process real-time data from diverse sources—including IoT sensors, satellite imagery, and meteorological inputs—to achieve accurate forecasting of air quality indices. The model employs deep learning and ensemble techniques to continuously learn and adapt, providing early detection of pollution anomalies and identifying key pollution sources. Additionally, the system delivers actionable insights and tailored health advisories through an interactive, cloud-based platform, thereby supporting informed decision-making by environmental policymakers and contributing to improved public health outcomes.

No. of Pages : 9 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032682 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IMPROVING SOFTWARE QUALITY THROUGH ENSEMBLE LEARNING IN DEFECT PREDICTION

(51) International classification	:G06N20/20, G06F11/36, G06F11/3668
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Software defect prediction is essential for improving software quality and realizing cost efficiencies in testing. The main aim is to identify and forward only defective modules to the testing phase. This study presents an intelligent ensemble-based model for software defect prediction that integrates various classifiers. The proposed model utilizes a two-stage prediction process to identify defective modules. Initially, four supervised machine learning algorithms are utilized: Random Forest, Support Vector Machine, Naïve Bayes, and Artificial Neural Network. These algorithms undergo iterative parameter optimization to attain maximum accuracy. In the subsequent phase, the predictive accuracy of the individual classifiers is amalgamated into a voting ensemble to generate the final predictions. This ensemble method enhances the precision and dependability of defect predictions. Seven historical defect datasets from the NASA MDP repository CM1, JM1, MC2, MW1, PC1, PC3, and PC4—were employed to implement and ass

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025
(21) Application No.202541032709 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI CAMERA-INTEGRATED RODENT ACTIVITY MONITORING SYSTEM

(51) International classification :G06N0020000000, A61B0005110000, G08B0021040000, A61B0005000000, G06V0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT [505] Using cutting-edge computer vision and artificial intelligence technologies, the system offers thorough monitoring and analysis of rodent activities via well placed smart cameras. Over watched areas, many sensors combine with cameras to identify motion, heat signatures, and audio patterns unique of rodent activity. [510]. Deep learning systems detect, recognize, and categorize several rodent species using real-time video feeds, thereby recording their movement patterns, and behaviors. The technology creates timestamped activity records with thorough behavioral analytics and keeps constant monitoring. [515] To forecast rodent behavior, pinpoint high-risk regions, and maximize monitoring device placement, machine learning algorithms examine both past and present data. [520] Edge computing nodes localize early video processing and motion analysis; cloud-based deep learning engines provide advanced behavioral pattern. The distributed design guarantees effective processing and low alert generating latency. [525] [530] When unexpected rodent behavior is found or when certain threshold circumstances are satisfied, automated alarm systems inform pertinent staff. The system keeps thorough activity records for trend analysis and creates real-time alerts for instantaneous action. [535] [540] Safe cloud-based dashboard offers thorough picture of risk evaluations, population trends, and rodent activity patterns over under observation regions. Interactive mapping tools provide real-time, comprehensive insights along with historical data. [545] By means of automated model training with validated rodent activity data, machine learning algorithms constantly improve detection accuracy and behavioral analysis.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :02/04/2025

(21) Application No.202541032711 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GPS LIVE VEHICLE TRACKING AND SPEED CONTROL

(51) International classification :B60R0025102000, B60R0025040000, B60R0025330000, B60K0031000000, G08G0001000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT GPS live vehicle tracking system and speed control of the vehicle based on maximum patent permissible speed of the particular road, live vehicle location and speed Updations to the owner's mobile. Currently almost of the public having an own vehicle, theft is happening on parking and sometimes driving insecurity places. The safe of vehicles is extremely essential for public vehicles. Vehicle tracking and locking system installed in the vehicle, to track the place and locking engine motor. The place of the vehicle identified using Global Positioning system (GPS) and Global system mobile communication (GSM). These systems constantly watch a moving Vehicle and report the status on demand. When the theft identified, the responsible person send SMS to the microcontroller, then microcontroller issue the control signals to stop the engine motor. Authorized person need to send the password to controller to restart the vehicle and open the door. This project also indicates speed of vehicle which can be calculated by using distance and time. This is more secured, reliable and low cost.

No. of Pages : 10 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032726 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SUSTAINABLE ENTREPRENEURSHIP SUPPORT SYSTEM AND METHOD THEREOF

(51) International classification	:G16H0050300000, A61B0005377000, G06Q0040030000, G06N0003080000, H04N0021440000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Disclosed herein is a sustainable entrepreneurship support system (100) that comprises a user interface (110) of a user device (102) collects a user entrepreneurial data, a communication network (104) configured to enable seamless data transmission, a processing unit (106) configured to process data, comprises an input module (112) configured to receive data, a pre-processing module (114) configured to filter irrelevant data and remove noise, a feature extraction module (118) configured to extract key features, a barrier identification module (122) configured to identify the user encountering barriers, a recommendation module (124) configured to recommend tailored suggestions further comprises a financial constraint model (126) configured to provide microfinance programs, a technological limitation model (128) configured to provide technological expertise, an institute-industry cooperation challenge model (130) configured to provide university incubators, a socio-cultural constraint model (132) configured to provide cultural sensitivity training, and a legislative barrier model (134).

No. of Pages : 26 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032742 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Powered Real-Time Language Translation and Learning Platform for Multilingual Education

(51) International classification :G06F0040580000, G06Q0030060100, G06Q0030010000, G09B0005060000, G06F0009451000

(86) International Application No :NA
Filing Date :NA

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(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :

AI-Powered Real-Time Language Translation and Learning Platform for Multilingual Education ABSTRACT: Traditionally, language translation was a complicated and labour-intensive job. This technique required human participation and was susceptible to discrepancies. AI translation technologies mitigate these issues by streamlining the process, enhancing efficiency and reliability. The Currents 2023 survey indicates that 45% of participants saw AI and machine learning technologies as facilitators of job efficiency, underscoring their role in enhancing communication among global marketplaces for organisations, sales, and e-commerce platforms. Providing content in several languages enables the expansion of audience reach, enhances user engagement, and facilitates entry into new markets. For instance, if a cloud CRM application functions on a worldwide scale, the AI translation tool facilitates communication between sales people and support teams with clients in their chosen languages, enhancing user experience and customer happiness, and eventually improving cloud ROI. The application of AI-driven translation to enhance accessibility for non-native speakers and promote an equitable learning environment for students from diverse linguistic backgrounds is critically examined.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032797 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR CONSENSUS CLUSTERING

(51) International classification :G06F18/23, G06N20/00, G06F18/2135

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure discloses a system (100) and method (500) for consensus clustering. The method (500) includes receiving (502), a dataset comprising a plurality of data points; applying (504), a plurality of base clustering algorithms to the dataset; calculating (506), a weight for each of the plurality of base clustering algorithms, based on a performance metric; constructing (508), a co-association matrix to quantify the frequency of assigning pairs of data points to the same cluster across the plurality of base clustering algorithms, wherein the contribution of each of the plurality of base clustering algorithm is weighted based on the calculated weight; transforming (510) the co-association matrix into a lower-dimensional Euclidean embedding using a dimensionality reduction technique; applying (512), a final clustering algorithm to the lower-dimensional Euclidean embedding; and classifying (514), a set of new data points into the plurality of consensus cluster assignments using a label propagation technique. To be published with Fig. 5

No. of Pages : 36 No. of Claims : 20

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :02/04/2025

(21) Application No.202541032844 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR COLLECTING WASTE AT SEASHORES AND A METHOD THEREOF

(51) International classification	:A61B0017000000, G06V0020100000, B64C0039020000, A61B0090000000, B25J0009160000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A system (100) and a method (200) implemented in a UAV for collecting waste at a seashore includes a processor (102). The processor (102) is configured to detect predefined waste using a first learning module (106) upon capturing visuals along the seashore using a camera (104) and an infrared sensor (104) of the UAV. The processor (102) collects the one or more types of predefined waste using a robotic arm (110) of the UAV upon classifying the detected predefined waste into one or more types using a second learning module (108). The processor (102) stores each of the one or more types of collected predefined waste in each of one or more designated compartments (112) within the UAV.

No. of Pages : 16 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025

(21) Application No.202541032859 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Solar-Powered Electric Vehicle with Intelligent Energy Management System

(51) International classification :B60L8/00, B60L53/51, B60L50/60, H02J7/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Solar-Powered Electric Vehicle with Intelligent Energy Management System is a cutting-edge transportation technology that seeks to enhance energy utilization and sustainability. The invention combines solar energy and energy management technologies to enhance the efficiency of electric vehicles, minimize use of conventional charging systems, and reduce the environmental footprint. The system has efficient solar panels that absorb and save energy in the vehicle battery. The smart energy management system has real-time control over the transmission of energy from the solar panels, battery storage, and other external charging systems, such that energy is consumed in the most efficient manner possible. The system adjusts according to driving behavior, weather conditions, and availability of solar energy so that the vehicle can run in a more environmentally friendly manner. An easy-to-use interface offers feedback on real-time energy use, solar panel performance, and battery life, making it easy for users to learn and optimize driving patterns for top efficiency. Further optimizing performance is predictive analytics combined with machine learning algorithms to further refine charging timelines and energy output. This energy-efficient and scalable solution helps make the world a greener place by lowering carbon emissions and facilitating the mass use of solar-powered electric cars. Through the use of renewable energy, the invention leads the way towards sustainable transportation and energy self-sufficiency.

No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032865 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SECURESYNC: INETELLIGENT HOME PROTECTION SYSTEM

(51) International classification	:G08B0013196000, G08B0025000000, G08B0025100000, G08B0025080000, G08B0025140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The "Smart Home Security System with Application Integration" project offers a modern solution to residential security by integrating sensors, , and a central control unit with a web app. This system enables real-time monitoring, instant notifications, and remote management of home security through a user-friendly app. By leveraging cloud services for data storage and processing, the system ensures reliability and scalability. The project enhances home security with convenient, accessible technology, providing users with improved safety and peace of mind.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032866 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Secure & Smart USB Sanitization Real-Time Threat Detection and prevention with Python

(51) International classification :H04L0009400000, H04L0009320000, G06F0021550000, G06F0021570000, G06F0021340000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The USB Authentication Systemis an open-source hardware and software solution designed to maximize data security through validation of a USB device prior to transferring data to an environment deemed trusted. This system serves as an intermediary secure verifier of authentication and integrity claims of USB devices, permitting only authorized and non- malicious devices to communicate with the host system. This solution addresses the serious threats posed by untrusted USB devices-these devices are increasingly becoming the easiest source of viruses, data breaches, and unauthorized access to systems. Unlike traditional security means, the USB Authentication System does not depend on the host operating system meaning its additional line of defense from software attacks. Its small and user-friendly designs would make it available to technical and non-technical engineers alike. The USB Authentication System is powerfully equipped to hold back threats from cyber resources in areas where trust is very high, for example, corporate offices, government agencies, and places in health care, all along keeping removable media safer interaction with them.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032867 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : InsightQC: AI-Driven Real-Time Defect Detection, Predictive Maintenance, and Automation for Quality Control in Smart Manufacturing

(51) International classification	:G06V0010820000, G06Q0010063100, G06Q0010060000, G06Q0010200000, G06Q0030020100
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Maintaining product quality has become increasingly difficult due to the quick development of manufacturing, where even little flaws can jeopardize structural integrity. The primary goal of this research is to create an intelligent, automated system for detecting defects in manufactured products and scheduling maintenance according to the frequency of defects. Present-day quality control methods frequently depend on manual inspections or simple automated systems, which may not be accurate enough to identify almost perceptible flaws and have limited dynamic scheduling capabilities. We provide an approach to address this gap by combining robotic process automation (RPA) with the advanced technology object detection algorithm YOLOv8 to enhance workflow automation and fault detection accuracy. While the RPA bot tracks the frequency of flaws, creates real-time dynamic maintenance schedules, and notifies stakeholders, the model identifies superficial defects in products. In addition to streamlining quality control, this combination strategy maximizes machinery maintenance, cutting expenses and downtime. According to preliminary findings, the system effectively identifies flaws and yields beneficial maintenance insights, two aspects that are essential for upholding precise production requirements for product quality. The research presented here proposes a data-driven, scalable strategy for industrial quality control that incorporates automation and computer vision.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541032870 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : "Throw Trash, Earn Cash: A Sustainable Initiative"

(51) International classification	:B65F0001140000, G06Q0030020700, B65F0001000000, G06Q0010300000, C02F0001440000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

The present patent discloses the "Throw Trash, Earn Cash" system, an innovative waste management solution that incentivizes individuals to dispose of waste responsibly while earning financial rewards. The patented system comprises smart waste collection units integrated with identification and weighing mechanisms to classify and measure deposited waste. Users interact with a digital platform that records waste contributions and distributes monetary incentives based on waste type and volume. This patent promotes environmental sustainability by transforming waste into economic opportunities, reducing pollution, and enhancing recycling efficiency. The system incorporates IoT-enabled smart bins, mobile applications, and automated reward mechanisms to optimize waste collection and encourage sustainable waste disposal behaviors, contributing to a circular economy.

No. of Pages : 8 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541032883 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A REGENERATIVE BRAKING SYSTEM

(51) International classification	:F01D0007000000, F01D0017160000, B60T0001100000, B60T0013660000, B60L0007260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
A regenerative braking system (106) for a vehicle is disclosed. The regenerative braking system (106) comprises a half shaft (200) disposed in an axle (102) of the vehicle and at least two chambers positioned within the axle (102). The at least two chambers comprise a first fluid chamber (202) and a second fluid chamber (204). The regenerative braking system (106) further comprises a piston (206) disposed in the axle (102) to separate the first fluid chamber (202) and the second fluid chamber (204), wherein the half shaft (200) extends through the first fluid chamber (202), the second fluid chamber (204), and the piston (206). In addition, the regenerative braking system (106) comprises a plurality of variable pitch blades (208) positioned within the second fluid chamber (204) and coupled to the half shaft (200). The plurality of variable pitch blades (208) is arranged to create a braking drag when rotated in the second fluid chamber (204). The regenerative braking system (106) comprises one or more link rods (210) connecting the plurality of variable pitch blades (208) to the piston (206), wherein the one or more link rods (210) is arranged to adjust a pitch of the plurality of variable pitch blades (208) based on a position of the piston (206). Furthermore, the regenerative braking system (106) comprises a pneumatic actuation unit (212) configured to supply a pressurized fluid in the first fluid chamber (202) during a braking operation, wherein the pressurized fluid actuates the piston (206) towards the second fluid chamber (204) and alters the pitch of the plurality of variable pitch blades (208). Fig. 2

No. of Pages : 18 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032886 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART VEHICLE DRIVER ALERTNESS SYSTEM AND METHOD THEREOF

(51) International classification	:G06F0003010000, G16H0050300000, G06V0020590000, G06N0020000000, G08B0021060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Disclosed herein is a smart vehicle driver alertness system and method thereof (100) that comprises an artificial intelligence-enabled smart sunglasses (102) equipped with an infrared eye-tracking sensor (104), a pupil dilation and gaze tracking sensor (106), and a real-time yawn detection sensor (108) to monitor drowsiness-related behaviours. A haptic feedback mechanism (110) provides immediate driver alerts, while a wireless communication network (112) transmits data to a cloud storage (114). The system (100) further includes an in-car artificial intelligence camera unit (116) and a smart steering wheel sensor (126) for comprehensive fatigue analysis. A processing unit (134), integrating a multi-sensor integration module (136), an adaptive machine learning algorithm (138), and a real-time alert generation module (140), triggers safety mechanisms including an emergency intervention module (142), an emergency notification module (144), an alarm unit (146), a vibration enabled seat unit (148), and an automated vehicle speed reduction unit (150).

No. of Pages : 41 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541032890 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : EFFECT OF WATER ABSORPTION ON SCRATCH RESISTANCE PROPERTIES OF ABACA AND SISAL NATURAL FIBER REINFORCED POLYMER COMPOSITES

(51) International classification :B29K 311/10, C08J 5/04, C08L 101/16, C08L 1/02, C08K 3/26

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Natural fibers are eco-friendly materials sourced from plants, animals, or minerals. Among them, plant based fibers such as abaca and sisal have gained significant attention due to their renewability, lightweight nature, and biodegradability. These fibers have been widely utilized in various industries, including textiles, composites, and construction, as sustainable alternatives to synthetic materials. One of the critical challenges associated with natural fiber-reinforced polymer composites (NFRPCs) is their susceptibility to water absorption, which can significantly influence their mechanical properties. This phenomenon affects the overall durability and performance of the composite materials, particularly their scratch resistance properties. Scratch resistance is a crucial parameter in evaluating the surface integrity and wear resistance of composite materials. The presence of moisture can weaken fiber-matrix adhesion, making the composite more prone to surface damage and micr.o-cracks under mechanical stress. As industries shift toward more sustainable solutions, understanding the impact of water absorption on the scratch resistance of abaca and sisal fiber-reinforced composites becomes essential for optimizing their applications in automotive, aerospace, and structural components. Research in this field continues to explore various treatments and modifications, such as fiber surface treatments and the incorporation of water-resistant polymer matrices, to enhance the durability of these composites. By addressing water absorption challenges, Natural Fiber composites can be further improved to meet the demands of modem engineering applications while maintaining their environmental and economic benefits.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541032897 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYNTHESIS OF IVACAFTOR AND ITS KEY STARTING MATERIALS USING FLOW PROCESS

(51) International classification :C07D0215560000, A61K0031470000, A61P0001180000, B01J0019000000, C07B0059000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a novel continuous flow process for the preparation of ivacaftor. The present invention also relates to a continuous flow process for the preparation of ivacaftor KSMs, 4-oxo-1,4-dihydroquinoline-3-carboxylic acid and 5-amino-2,4-di-tert-butyl phenol.

No. of Pages : 27 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032906 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AN IOT BASED SEWAGE BLOKAGE IDENTIFICATION SYSTEM

(51) International classification :H04L0009400000, H04W0004380000, H04L0067120000, H04L0041147000, G06Q0050260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
AN lOT BASED SEWAGE BLOCKAGE IDENTIFICATION SYSTEM The loT-based Sewage Blockage Identification System is designed to revolutionize urban drainage management by enabling real-time monitoring and proactive maintenance. This system employs an array of sensors, including flow meters, ultrasonic water-level detectors, and pressure sensors, to continuously collect data from critical points in the drainage network. Using secure wireless communication protocols like LoRa WAN and NB-IoT, the sensor data is transmitted to a centralized platform where machine learning algorithms analyze it for anomalies indicative of blockages. The system generates instant alerts and provides actionable insights via a user-friendly dashboard, allowing authorities to address issues promptly. Edge -Cll computing enhances efficiency by processing data locally, reducing latency and optimizing bandwidth. Predictive analytics further supports proactive maintenance by ~. forecasting potential blockages based on historical data trends. Designed for scalability, the system integrates seamlessly with existing drainage management frameworks and smart city infrastructures such as GIS and emergency response systems. With robust data security measures, this solution ensures compliance with privacy regulations while optimizing resource utilization. By enabling timely interventions, it mitigates flooding risks, reduces environmental hazards, and promotes the sustainable development of urban infrastructure

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032907 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SCOURING OF SALT CHUCK : AUTONOMOUS POND SURFACE CLEAN-UP SYSTEM

(51) International classification :G06N0003080000, G06N0003045000, A01K0061590000, E02B0003040000, E02B0003020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
SCOURING OF SALT CHUCK: AUTONOMOUS POND SURFACE CLEAN-UP SYSTEM Ponds grapple with diverse challenges as plastic trash accumulation harms aquatic ecosystems and endangers a variety of species. The urgency to address these issues is underscored by the importance of ponds as vital habitats. Detrimental effects of plastic trash on water quality, aquatic life, and biodiversity necessitate prompt removal. Utilizing advanced technologies such as Satellite signals, loT sensors, and AI & ML with deep learning algorithms can expedite trash detection and removal processes. Swift intervention is critical to restoring pond ecosystems, safeguarding biodiversity, and ensuring sustainable water resources. Keywords: Plastic Trash Accumulation, Aquatic Ecosystems, Satellite Signals, loT Sensors, AI & ML, Deep Learning

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032910 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "AI POWERED VEHICLE LOCATION PREDICTION SYSTEM"

(51) International classification	:B60R0025330000, B60R0025102000, B60R0013100000, B60R0025300000, B60R0025100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This project aims to develop an integrated system for vehicle registration, theft detection, and real-time tracking using a combination of hardware, software, and cloud technologies. The primary objective is to create a website for vehicle owners to register their vehicle details, such as the RC book, license, and number plate. In case of theft, owners can report the incident via the website, initiating a series of actions to track the stolen vehicle. The system consists of two main components: the vehicle section and the finding section. In the vehicle section, the vehicle is equipped with a microcontroller, RF transmitter, GSM module, and a fuel controller. These components are programmed with embedded C and Arduino, enabling communication with a cloud server. The vehicle transmits a unique RF signal that is detected by receivers located at key points such as toll booths, petrol stations, and traffic signals. If a stolen vehicle passes these checkpoints, the system activates an alarm and automatically shuts off the engine by cutting off the fuel supply using a solenoid valve. Simultaneously, the system sends the GPS location of the vehicle to the cloud and the central control room, where authorities can track the vehicle's real-time location. The stolen vehicle's information is then relayed to the police, aiding in the swift recovery of the vehicle. By combining RF technology, GPS tracking, and cloud computing, this system enhances vehicle security, enables faster recovery of stolen vehicles, and provides a seamless interface for owners and authorities through the website. Ultimately, the project leverages modem technology to create an efficient solution to vehicle theft, reducing the chances of loss and increasing recovery speed.

No. of Pages : 18 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025

(21) Application No.202541032912 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "RECONFIGURABLE MIMO ANTENNA FOR VEHICULAR COMMUNICATIONS"

(51) International classification	:H01Q0001380000, H01Q0001360000, H01Q0021280000, H01Q0001240000, H01Q0009040000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Antenna design plays a vital role in vehicular applications, ensuring efficient wireless communication. In this paper, a description of a recontigurable MIMO antenna fur vehicular communication systems is presented. The antenna operates at 2.3 GHz in the on state and 5.73 GHz in the off state, supporting effective signal reception and transmission. The key performance parameters like return loss, Voltage Standing Wave Ratio (VSWR), radiation pattern, and surface current distributiu1i have been explored with the help of CST STUDIO SUITE, a well-known electromagnetic simulation tool. The antenna is designed on an FR4 substrate to enhance compactness and performance. The reconfigurable antenna provides flexibility to meet different communication conditions, improving vehicular wireless connectivity. The obtained measurements indicate that the proposed antenna meets the required performance characteristics, and hence, it is a viable candidate for potential use in future vehicular communications.

No. of Pages : 16 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032914 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Predicting Autism Spectrum Disorder Using SVM and Random Forest

(51) International classification	:G06N0020000000, G16H0050300000, G06F0018243000, G06F0018241100, G16H0050700000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition that affects communication, social interactions, and behaviour. Early detection is crucial, as timely interventions can significantly improve outcomes for individuals with ASD. The objective of this research is to develop a machine learning-driven model capable of predicting the likelihood of ASD in individuals with greater accuracy and reliability. To achieve this, the study leverages a comprehensive dataset incorporating diagnostic scores, demographic details, medical history, and additional parameters such as geographic location and previous screening tool usage. A thorough Exploratory Data Analysis (EDA) was conducted to identify key patterns and determine the most influential features in ASD prediction. The data underwent preprocessing, including standardization, encoding of categorical values, and handling of missing data, to ensure model accuracy. For classification, the dataset was split into training and testing subsets, and a Voting Classifier was employed—combining the strengths of Support Vector Machine (SVM), Random Forest, Decision Tree, and Logistic Regression models. The model demonstrated high reliability in distinguishing ASD cases from non-ASD cases, as evaluated through key performance metrics such as accuracy, precision, recall, and F1-score.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032915 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART VOICE-ASSISTED GOGGLES FOR VISUALLY IMPAIRED EDUCATION

(51) International classification :G09B0021000000, G06N0003045000, A61H0003060000, A61F0009080000, G06V0010100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
According to World Health Organization, there are 253 million visually impaired people in the globe, 36 million of whom are blind. When it comes to getting education, the blind frequently face significant obstacles, including challenges with reading and understanding text. To solve this problem, we suggest a project that will help educate visually disabled students by utilizing the most recent developments in artificial intelligence and computer vision. In our research, text will be accurately read from images taken by a camera using machine learning techniques like convolutional neural networks (CNN) and natural language processing (NLP). The user will then be presented with this data through a pair of voice-activated smart goggles after this data has been processed. Our project aims to provide a user-friendly and precise solution that enables visually impaired people to freely access and understand written material. Visual impairment can present a number of challenges in education, including difficulty reading and understanding written materials, limited access to information, and difficulty with spatial concepts. Students may have difficulty with fine motor skills, which can make it difficult to take notes or complete written assignments. Teachers may also struggle to find appropriate materials and methods for teaching visually impaired students, lack of specialized educational materials such as braille textbooks and audio textbooks, which can be expensive and timeconsuming to produce. Smart vision goggles, for the visually impaired have the potential to greatly enhance the education experience for those with visual impairments. These glasses use advanced computer vision and machine learning algorithms to enhance and augment the visual information that is available to the wearer. The glasses can provide real-time text to-speech functionality, allowing the user to hear written text read aloud through real-time text extraction using OCR(Optical Character Recognition). This technology can provide a more inclusive and accessible learning environment for visually impaired students, allowing them to better understand and retain information. Additionally, the glasses can also provide an enhanced sense of independence and autonomy for visually impaired students, enabling them to navigate the physical world and interact with their environment in new ways. The project mainly revolves around OCR(Optical Character Recognition) which plays a vital role.

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032916 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED GARBAGE COLLECTOR ROBOT

(51) International classification :G06F0012020000, B25J0009160000, B25J0011000000, B65F0003020000, B25J0019000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
CLAIMS We Claim Claim I: The automated garbage collector incorporates advanced sensors such as ultrasonic, 1R, or LiDAR, enabling the system to detect obstacles and navigate autonomously through various environments, ensuring efficient waste collection without human intervention. Claim 2: Equipped with a camera module and Al-powered image processing, the system accurately identifies and classifies different types of waste, including biodegradable, non- biodegradable, and recyclable materials, allowing for proper segregation and disposal. Claim 3: The automated garbage collector utilizes a robotic arm or suction mechanism to securely pick up and transport waste, providing efficient handling and minimizing human labor during the garbage collection process. Claim 4: Integrated with IoT connectivity, the system allows for real-time monitoring of waste collection progress, battery status, and system health, enabling remote control and diagnostics via a mobile app or computer. Claim 5: The navigation and movement system, driven by Raspberry Pi or similar microcontroller, ensures autonomous route optimization, allowing the robot to select the most efficient paths for waste collection, thereby reducing operational time and energy consumption. Claim 6: The system features Bluetooth or Wi-Fi connectivity, enabling remote control, status updates, and real-time alerts regarding operational issues, system malfunctions, or completed tasks, enhancing user convenience and maintenance monitoring. Claim 7: In case of obstacle detection or system failure, the automated garbage collector automatically triggers emergency shutdowns and sends alerts to the operator, ensuring safe operation and minimizing the risk of damage or accidents.

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032917 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CONTROLLER-BASED SMART VEHICLE ASSISTING SYSTEM

(51) International classification :G08G0001160000, G06V0020560000, B60Q0009000000, G08G0001010000, B60W0050140000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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Filing Date :NA

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(57) Abstract :
Abstract This project uses deep learning and Arduino to construct vehicle lane identification and accident avoidance systems. Traffic safety is important, and accidents can have serious repercussions. Deep learning algorithms and Arduino microcontrollers are used in this system to improve driver awareness and avert possible collisions. Three methods arc used in the Emerge in Vehicle Accident Prevention System: an Arduino Uno, an LCD 16x2, an infrared sensor for detecting vehicle speed, and a collision warning detection system that employs a buzzer to identify the likelihood of an accident and provide an auditory warning to the driver. The swift rise in vehicle traffic necessitates creative approaches to improve road safety and avert accidents. This summary describes a comprehensive system created for Accident Prevention and Lane Detection, leveraging cutting-edge technologies to reduce the likelihood of collisions and enhance overall road safety. The suggested system combines computer vision, machine learning, and sensor technologies to fulfill its goals. The main components consist of a camera-based detection system and a smart accident prevention module. The lane detection system uses computer vision algorithms to examine road markings and accurately recognize lane boundaries, guaranteeing real-time monitoring of vehicle locations within designated lanes. The accident prevention module employs machine learning algorithms trained on historical accident data to forecast possible collision situations. This module is crafted to evaluate various elements such as vehicle speed, distance between vehicles, and driver conduct to pinpoint potential hazards. In the case of a looming collision, the system activates immediate alerts for both the driver and nearby vehicles, intending to offer prompt warnings and reduce potential accidents.

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032918 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ELECTRIC VEHICLE BATTERY MONITORING SYSTEM

(51) International classification :G01R0031392000, G01R0031367000, H01M0010480000, H01M0010420000, G01R0031360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
Abstract The EV Battery Monitoring System is a sophisticated, automated system designed to improve electric vehicle (EV) battery safety, reliability, and efficiency. Conventional battery monitoring involves real-time monitoring under constant supervision, which can prove inefficient and unreliable. This system does away with the need for manual intervention through the incorporation of real-time estimation of battery health, automatic reporting, and prevention of fire incidents. The system features sensors for monitoring battery voltage, current, temperature, and state of charge (SoC). A NodeMCU Wi-Fi module sends the information to a mobile application, giving users immediate alerting on battery health, approximate range, and warning conditions such as overheating or undercharge. Onboard display unit also shows real-time battery status for driver ease. For protection against fire, the system includes an automatic emergency response system. Upon detection of abnormal temperature increase, the system activates a cooling device or fire suppression system to counteract dangerous events. A buzzer warning system informs the user, preventing delays in action that could lead to risks. Through battery health monitoring automation, energy usage optimization, and fire safety improvement, this system prolongs battery life, enhances vehicle performance, and promotes user safety, making it a game-changer in EV technology.

No. of Pages : 19 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025

(21) Application No.202541032919 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WEARABLE SAFETY UNIFORM FOR MINERS

(51) International classification :A61B0005000000, A61B0005020500, A61B0005024000, A61B0005110000, G08B0021020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract WEARABLE SAFETY UNIFORM FOR MINERS Coal mining operations are fraught with high risks and conditions that put safety at the forefront unto all mine workers. This initiative aims to develop an intelligent uniform for coal miners, incorporating modern sensor technology for continuous evaluation of environmental factors and fitness parameters. Such uniform will contain embedded sensors capable of detecting toxic gases (many, if not all, methane and carbon monoxide) and monitoring temperature and vital signs of the miners, including heart rate, body temperature, and activity level. Data will then be fed into an LED control panel, giving staff and supervisors instant information with which to monitor safety. It has a voice system fixed inside, which passes on an alarm or sound to alert both the worker and the control center of any possibly dangerous incidents, giving notification in real time. For uninterrupted communication and exchange of data, the technology will use LoRa WAN, a low-power wireless wide-area network considered highly trustworthy and capable of covering longer ranges. This feature allows the uniform to work continuously, even in deep areas such as underground mines. The high-tech protective gear is meant to enhance worker safety, shorten reaction times when faced with danger, and lower the number of accidents that occur during coal mining.

No. of Pages : 16 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032920 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : START CONTROL OF MOTOR CYCLE ENGINE WITH IMU SOFTWARE

(51) International classification :A61P0011000000, F02D0041060000, C01B0013110000, F02B0075020000, F01N0003080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract Our project proposes a self - start technique for bike. Two wheeler is one of the essential transport medium. Most of the Two-wheelers are used four stroke engines which require spark to start the engine When Two- Wheelers are operating in low temperature and high altitude regions, starting a two wheeler is the major problem because oxygen is the basic need for combustion. To overcome this, we proposed a system which contains an oxygen tank inbuilt to the engine. The entire monitoring will be implemented using IMU software which is user friendly and easily accessible. The proposed system is economical and reduces the overall cost of the system While existing bike will not self-start at low altitude, our modified engine connected with oxygen tank operated with IMU software regulates the state of bike whether bike is in ON or OFF state, if the engine is in OFF state IMU software start work with temperature check . If the temperature is low it allows the flow of oxygen which is connected with bike for few seconds. Once the oxygen flows the combustion takes place it helps to raise in temperature then bike starts, whether the temperature is in normal range user felt its due to lack of oxygen we can operate the flow of oxygen manually through the time based flow of oxygen. Mainly the modification is for the physically disabled people those who cannot able to use the kill start and those who are travelling for long alone where the survival of the human count is less

No. of Pages : 17 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032924 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SMART APPROACH TO GREENHOUSE FARMING USING IOT AND ML: REAL TIME ENVIRONMENTAL TRACKING AND MANAGING ANIMAL INTRUSION (AGRO-AID)

(51) International classification :A01G0009240000, G06Q0050020000, A01M0029160000, A01G0009260000, A01G0025160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A SMART APPROACH TO GREENHOUSE FARMING USING loT AND ML: REAL TIME ENVIRONMENTAL TRACKING AND MANAGING ANIMAL INTRUSION (AGRO-AID) This is designed to optimize crop growth by providing real-time environmental monitoring and intelligent decision-making support. Greenhouses create a controlled environment for farming, but challenges such as fluctuating temperature, humidity variations, and improper nutrient levels can affect plant health and yield. This system integrates loT-enabled sensors to continuously track key parameters such as soil moisture, temperature, humidity, and carbon dioxide levels. Machine Learning algorithms analyze the collected data to offer predictive insights, helping farmers make iufunueu decisions regarding irrigation _ schedules, ventilation adjustments, and nutrient management. Additionally, the system incorporates weather forecasting by analyzing historical climate data and real-time meteorological inputs, allowing farmers to anticipate external climate changes that may influence greenhouse conditions. Another major challenge in greenhouse farming is the intrusion of small animals such as birds and squirrels, which can damage crops by feeding on young plants, disturbing the soil, or knocking over delicate seedlings. The system utilizes real-time image processing and motion detection through loT cameras and sensors to identify unwanted intrusions. Upon detecting small birds or animals, farmers receive instant alerts via a mobile application, enabling them to ~ take necessary actions to protect their crops. By using non-invasive deterrents such as visual or 0 ~ sound-based repellent techniques, the system ensures that crop damage is minimized without 1.1') ~ harming wildlife. Designed to be cost-effective, scalable, and easy to use, this smart 55 greenhouse farming system helps farmers improve productivity, minimize losses, and maintain 1 ~ optimal growing conditions while ensuring sustainable and eco-friendly farming practices.

No. of Pages : 16 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032925 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : HEART DISEASE PREDICTION USING DEEP LEARNING

(51) International classification	:G16H0050200000, G16H0050300000, A61B0005055000, A61B0005000000, G16H0050700000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT HEART DISEASE PREDICTION USING DEEP LEARNING Heart disease continues to be a leading cause of mortality worldwide, emphasizing the need for accurate and timely diagnosis to enhance patient outcomes. Traditional diagnostic methods relying on manual interpretation of MRI scans are time-consuming and prone to variability among radiologists. This research introduces an advanced diagnostic approach using the DenseNet deep learning model to analyze Cardiac MRI (CMRI) images, aiming to accurately classify critical cardiac conditions, including Ischemic Heart Failure, Non-Ischemic Heart Failure, Hypertrophy, and Normal states. Dense-Net's densely connected architecture enhances feature extraction by efficiently learning complex patterns from MRI images, ensuring high diagnostic accuracy while minimizing false positives and negatives. The model is trained and validated using well-labelled CMRI datasets, employing advanced data augmentation techniques to improve generalization and robustness. By leveraging the powerful residual connections of Dense-Net, the model effectively addresses challenges like vanishing gradients, enabling efficient training and superior performance. Preliminary results indicate that this approach outperforms traditional diagnostic methods, offering a reliable, automated solution for cardiac disease detection. This study bridges the gap between conventional medical imaging and cuttingedge artificial intelligence, providing a faster, more accurate diagnostic tool for early detection and personalized treatment planning. The findings demonstrate the transformative potential of AI-driven medical imaging to revolutionize cardiology, enhancing clinical decision-making and ultimately improving patient care and treatment strategies.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032926 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IMPENDING IOT AND AI IN RENEWABLE ENERGY RESOURCES

(51) International classification	:C10L0001020000, C02F0001140000, F24S0023770000, B01D0053620000, F03G0006000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT HIMPENDING lOT AND AI IN RENEWABLE ENERGY RESOURCES The usage of conventional energy sources poses threat to the bio planet by means of ecological hazards as well as economical hazards. Instead of using fossil fuels we can use renewable 7 resources like sun, air, etc to produce electricity. Solar is the main source here. This renewable resource produces excessive energy. According to global survey. By using loT device it helps in ___. 1 monitoring solaLpanels_~onvenientlx_. And w!~hthat we are using arti-ficial- predictive analysis in weather reports. Here batteries are used to store the energies and use at night when there is no sunlight.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032927 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CHRONIC KIDNEY DISEASE PREDICTION USING MACHINE LEARNING

(51) International classification :G16H0010600000, G16H0050300000, G16H0050200000, G16H0010400000, A61P0013120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
AllSTI{ACT CHRONIC KIDNEY DISEASE PREDICTION C:hrohic Kidney Disease (CKD) is a global health challenge, with increasing !' '. prevalence and· si_gnificant implications lor patient outcomes. Early detection and diagnosis of .. .- CKD arc crucial for· timely intervention and prevention of funhcr complications. Traditional diagnostic mct.hocls rely on clinical data, such as blood .tests and patient history, but these approaches c:tn be costly, time-consuming, and dependent on expert inrerprctation. Machine leaming (i\IIL);techniques offer a promising alternative, enabling the development of predictive models that·c~iii assi-st heallhcare professionals in diagnosing CK D at an earlier stage. This study - - .e,,.p.l G l'c'r;. .tch e~;;!p pl.i cat.i G.n •• o.f -V.ari ou ~~ 11:1 acl.1.iu e~-l.e a w.i.u.g .~tl.g o.t:ir l.1ms , . .,imJUJJ.il:t.g .. d' ·' j s i o 1.1. L[<';J§_,_ _ 1·andom l"orest, support vector machines. nnd neural netwo1"ks. to predict CKD. The rese:1rch utilizes publiC-ly <1Vdels Is ev:iluated usi11g common metrics such as accuntcy, prec1s1on. recall, and the area."u1ider the receiver opcr:tting characteristic (ROC) curve. The results indicate that certain ML 1hodels, particularly random lorest:; and support vectm machines, exhibit high prediction acdlra"(\< 1i1iiking them suitable candidates 1(1r clinical deployment .Additionally. the intnprct

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032928 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SAFENEST- AN IOT-ENABLED SMART BAND FOR WOMEN'S SAFETY

(51) International classification :H04W0004900000, G08B0025010000, G08B0021020000, G06Q0050260000, A61B0005318000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT "SAFENEST-AN lOT -ENABLED SMART BAND FOR WOMEN'S SAFETY" The Women Safety Band is an innovative wearable device designed to enhance personal security using loT-based technology. It integrates GPS and GSM modules for real-time location tracking and instant emergency communication, ensuring swift response in distress situations. The device features a voice sensor for hands-free activation, an emergency button for quick distress signaling, and an ESP32-CAM module for capturing real-time images and videos as evidence. Additionall)', an_1_CQ_~creen dis_p_@ys, Il_e.llrQ.y_§afe_l~c;_atio!!~ such a~Qolicestations and ~ ~~~ bus stops, enabling users to navigate to secure areas efficiently. This smart wearable is lightweight, durable, and optimized for battery efficiency, making it suitable for everyday use. By combining advanced wearable electronics, real-time monitoring, and automated alert Q) systems, the Women Safety Band provides a reliable and effective personal safety solution. It C) not only empowers individuals by offering an immediate response mechanism but also Cll contributes to broader public security initiatives. Law enforcement agencies can leverage datafrom these devices to identify high-risk areas and enhance preventive measures. This invention N E represents a significant advancement in smart wearables and security technology, bridging the 0 gap between personal safety and technological innovation to create a safer society.

No. of Pages : 16 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541032929 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MILITARY TROOP TRAINING WITH VR/AR

(51) International classification :G09B0009000000, A63B0069000000, G06F0003010000, G06Q0030060100, A63F0013650000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT MILITARY TROOP TRAINING WITH VRIAR The Military Troop Training with AR!VR is a conventional training techniques employed by army troops have proven effective for decades, but increasingly there is a need to find more immersive and flexible training solutions. This project will create a vittual reality (VR) and augmented reality (AR) game application to train military troops, providing an alternative to traditional methods. Utilizing Unity as the development platform, this project is dedicated to developing a dynamic training environment in which soldiers can train in realistic situations with high and low difficulty levels within an immersive VRJAR environment. A custom VR controller is also created to cater to improved user interaction and realism. With a stress-free and interactive training environment, the application enables troops to practice and enhance their skills in a. managed, flexible environment. The anticipated result is the launching of a new method of training that minimizes stress but enhances the effectiveness and versatility of military training programs.

No. of Pages : 14 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032938 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PAPAIN UREA FILM-FORMING HYDROGEL WITH CHITOSAN FOR ENHANCED THERAPEUTIC APPLICATIONS

(51) International classification	:A61K0009000000, A61P0017020000, A61K0009060000, A61L0026000000, A61K0047360000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The Papain Urea Film-Forming Hydrogel with Chitosan is a new wound care product that combines the enzymatic activity of Papain, the advantages of urea for tissue regeneration, and the bio-adhesive qualities of Chitosan to If promote healing. When applied to the skin, this hydrogel creates a flexible, transparent film that releases active substances over time, lowers the risk of infection, and keeps the wound moist and healing friendly . Papain speeds up wound debridement and urea increases this activity and encourages tissue regeneration. Chitosan promotes film adherence to the wound site and 10 otters antibacterial protection. By providing sustained drug release I delivery, the hydrogel improves patient compliance and lessens the need for frequent reapplications. Papain Urea hydrogel is a promising treatment for both acute and chronic wo·unds, such as diabetic foot ulcers, pressure ulcers, and bums, according to In vitro study lhal demonstrate a considerable improvement in wound closi1re rates and tissue regeneration. This novel fonnulation offers a safe and efficient alternative for contemporary wound care.

No. of Pages : 19 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032944 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-BASED DYNAMIC PRICING MODEL FOR E-COMMERCE PLATFORMS

(51) International classification :G06Q0030020100, G06N0020000000, G06Q0010040000, G06Q0030060100, G06Q0030028300
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an AI-based dynamic pricing model for ecommerce platforms that optimizes product prices in real-time based on multiple datadriven factors. The system integrates artificial intelligence and machine learning techniques to analyze market trends, competitor pricing, customer behavior, inventory levels, and macroeconomic indicators. By leveraging deep learning models such as regression analysis, clustering, reinforcement learning, and time-series forecasting, the invention ensures automated and adaptive price optimization. The proposed model continuously monitors data streams and dynamically adjusts product prices using an intelligent decision-making engine. The system incorporates real-time competitor analysis, personalized pricing strategies, demand forecasting, and seasonal pricing adjustments. It operates on a cloud-based infrastructure, allowing seamless integration with e-commerce platforms through APis. This AI -driven approach eliminates inefficiencies in traditional pncmg methods, enhances revenue generation, improves customer engagement, and ensures competitive market positioning. The system can be implemented across various industries, offering scalability and adaptability for different e-commerce sectors.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541032955 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : High-performance mosquito trap combining CO2-infused attractant paste, UV light lure, and electrified grid elimination

(51) International classification :A01M0001020000, A01M0001220000, A01M0001040000, H02J0009060000, B60L0058200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract: The present invention is a high-performance mosquito trap combining CO_2-infused attractant paste, UV light lure, and electrified grid elimination. A mosquito eradication system that integrates UV light, an electrified grid, and a biochemical attractant paste for maximum effectiveness therein a biochemically engineered paste containing CO_2-generating agents (CaO, $KMnO_4$, carbon dust, yeast fermentation) and sweat-mimicking compounds (lactic acid, octenol, casein, etc.). A high-voltage mosquito zapper circuit using an NE555 timer-driven MOSFET switch and a flyback transformer to generate lethal voltage and a dual power system supporting solar charging and external DC charging, ensuring continuous operation in any environment, therin a safety-enhanced electrified grid system, enclosed to prevent accidental human contact while maintaining high mosquito capture rates thereby a long-lasting, low-maintenance system requiring only periodic attractant paste replacement and minimal grid cleaning.

No. of Pages : 7 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033018 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR AUTOMATED PRODUCT INSPECTION, CLASSIFICATION, AND INVENTORY MANAGEMENT IN E-COMMERCE GROCERY FULFILLMENT

(51) International classification	:G06T0007000000, G06Q0010087000, G06N0003080000, G06Q0010063900, G06V0010200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT SYSTEM AND METHOD FOR AUTOMATED PRODUCT INSPECTION, CLASSIFICATION, AND INVENTORY MANAGEMENT IN E-COMMERCE GROCERY FULFILLMENT The present disclosure relates to a smart vision-based quality control system (100) for automated product inspection, classification, and inventory management in e-commerce grocery fulfillment. The system (100) comprises a hardware module (110) with a camera (111) for high-resolution imaging, a conveyor belt unit (112) for transportation, robotic arms (113) for sorting and packaging, and packaging equipment (114) for fulfillment. An integration module (120) ensures seamless data processing, incorporating APIs (121), a middleware sub-system (122), GPUs (123) for AI-driven processing, and an inventory management sub-system (124) synchronized with an ERP unit. A software module (130) provides AI-based quality assessment with an image pre-processing unit (131), an OCR model (132) for text validation, an object detection model (133) for defect identification, and a data analytics unit (134). A cloud module (140) enables centralized storage and real-time processing. A data layer (150) categorizes products based on AI-driven parameters, while a dashboard module (160) supports real-time analytics and alerts. This system optimizes defect detection, efficiency, and quality compliance.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033024 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A MULTISPECTRAL TRANSVAGINAL IMAGING PROBE SYSTEM

(51) International classification :A61B0005000000, A61B0008120000, A61B0090000000, G16H0040630000, A61B0001000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT A MULTISPECTRAL TRANSVAGINAL IMAGING PROBE SYSTEM The present invention provides a multispectral transvaginal imaging probe system (100) that aids in the qualitative and quantitative analysis of cancerous lesions in the uterine cervix of a patient. The imaging probe (109) acquires multispectral images of the patient's cervix by exciting narrowband wavelengths of light, overlapping with the peak of absorption of the key cancer biomarkers. The probe captures the images of the cervix in a multispectral imaging modality, where the cervix is incident with blue (450 nm), green (545 nm), yellow (575 nm), orange (610 nm), and white light. After acquisition, the images are processed and the multispectral images are displayed on the GUI for the diagnosis by the clinician. The multispectral transvaginal imaging probe is also enabled with an artificial intelligence (AI) based algorithm for the real-time detection of precancerous lesions. Figure. 1

No. of Pages : 29 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033043 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : “ENHANCED DIGIT RECOGNITION USING CNN PATTERNS AND FUTURE DIRECTIONS”

(51) International classification	:G06N0003045000, G06N0003080000, G06F0018214000, G06V0010440000, G06V0030190000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

Handwritten digit identification is a subject in AI and machine learning, and it has several applications in banking, education, postal services, and document processing. In this work, we study a deep learning-based method for handwritten digit recognition using the MNIST dataset comprising 70,000 grayscale images of digits (0–9). The aim in this research is to use CNNs to make a system for recognition of handwritten digits that is efficient and accurate. This research targets to create, use, and prove a deep learning model. The model is for classifying digits from the MNIST dataset. Feature extraction is greatly optimized by using particular convolutional layers, as well as max-pooling, which is used for minimization of computational complexity along with completely fully connected layers to greatly improve the accuracy of classification. The accuracy can also be increased by checking a hybrid model such as merging CNN for particularly complex handwritten characters with transformer-based models or RNN. This

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033044 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : “Create a Smart Infrastructure Allocation System to optimize resource utilization, enhance energy efficiency, and support sustainable campus operations.”

(51) International classification :G06Q0050060000, G06Q0050200000, F24F0011300000, F24F0011000000, G06F0009500000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The Smart Infrastructure Allocation System is a system that will transform resource management on a college campus by embracing cutting-edge technologies like IoT and real-time monitoring of data. The system is meant to maximize the utilization of resources, improve energy efficiency, and enhance sustainable campus operation. Through gathering and analyzing information on energy use, water consumption, space usage, and infrastructure condition, the system facilitates intelligent allocation and resource automation. Future applications involve integrating motion sensors along with temperature sensors to sense the presence of people and change environmental conditions accordingly. Such sensors will be directly attached to fans and lights to achieve effective energy activation within a defined radius. Main elements of the system are energy optimization via smart lighting and HVAC management, AI-powered space management for labs and classrooms, water savings through leak detection and optimized irrigation, and pre

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033045 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : “Effect of Doping and Oxygen Vacancies on the Structural and Electrical Properties of (1-x)NaNbO3-xBiGdKZr/TiO3 Ceramics for Negative Permittivity and Negative Permeability”

(51) International classification	:H01B0001120000, C10N0030120000, C01G0023000000, G02B0005300000, C08L0065000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention relates to the development of $NaNbO_3$-based ceramics doped with $BiGdKZr/TiO_3$, designed for applications requiring negative permittivity and negative permeability. The material is synthesized through a solid-state multi-step sintering method, ensuring enhanced conductivity (3.3907×10^{-8} s/cm at 500°C for x=0.02) and low activation energy (0.0188 eV), which contribute to optimized dielectric and electromagnetic properties. The engineered oxygen vacancies and doping levels improve charge transport, making the material suitable for advanced sensors, actuators, and electromagnetic applications. The invention provides a promising lead-free alternative with stable performance in high-temperature environments, demonstrating potential for energy harvesting, signal processing, and next-generation electronic components.

No. of Pages : 11 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033052 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : IMPACT OF CUSTOMER RELATIONSHIP MANAGEMENT ON CUSTOMER LOYALTY, CUSTOMER RETENTION, AND CUSTOMER PROFITABILITY ON E-COMMERCE STORES

(51) International classification :G06Q0030020000, G06Q0030020100, G06Q0030025100, G06Q0030020200, G06N0020000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an AI-powered Customer Relationship Management (CRM) system designed to enhance customer loyalty, retention, and profitability in e-commerce stores. The system leverages machine learning (ML), predictive analytics, and natural language processing (NLP) to analyze customer interactions, detect sentiment, and predict churn probability. A customer lifetime value (CLV) predictor optimizes marketing strategies by segmenting customers based on profitability potential, while an AI-driven engagement module automates personalized promotions, retention workflows, and re-engagement campaigns. The invention further includes a real-time adaptive learning mechanism that refines marketing strategies based on customer behavior, ensuring dynamic optimization of customer relationships and revenue growth.

No. of Pages : 19 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025

(21) Application No.202541033074 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Toe Angle Adjustment System for Real-Time Steering Control in Go-Karts and Method of Operation

(51) International classification	:B62D0017000000, B62D0005040000, B62D0007140000, B60G0007000000, B62D0007150000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: Toe Angle Adjustment System for Real-Time Steering Control in Go-Karts and Method of Operation The present disclosure relates to a toe angle adjustment system (100) for go-karts (10) that allows users to make real-time adjustments to front wheel toe-in and toe-out angles while driving, thereby enhancing performance, agility, and cornering precision without compromising stability. The toe angle adjustment system (100) comprises a steering assembly (102), a supporting member (114), a driving unit (120), a controller (122), and a user interface (134). The toe angle adjustment system (100) enables drivers to switch between multiple toe angle positions (toe-in, neutral, and toe-out) using the intuitive, user interface (134) without requiring manual intervention or disassembling steering components. The toe angle adjustment system (100) ensures precise and incremental adjustments to accommodate diverse track conditions, driving styles, and performance preferences, thereby providing a competitive advantage in motorsports while maintaining mechanical durability and operational reliability.

No. of Pages : 39 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033077 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An Automated Device for Motor Stator Dismantling and Method of Operating the Same

(51) International classification	:H01M0010540000, H02M0001000000, H04W0012000000, B24C0007000000, B23K0103000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: An Automated Device for Motor Stator Dismantling and Method of Operating the same The present disclosure proposes an automated device (100) for motor stator dismantling, which include cutting, splitting, cleaning, and shredding operations. The automated device (100) comprises a casing (102), an opening lid (104), a carrier member (112), an abrasive jet processing unit (128), a splitting unit (136), a shredding unit (156), and a controller (170). The abrasive jet processing unit (128) is configured to precisely cut plurality of copper windings (12) and clean the motor stator (10). The splitting unit (136) is configured to separate the plurality of copper windings (12). The shredding unit (156) is configured to receive and shear the plurality of copper windings (12) into uniform copper recyclable pieces. The controller (170) is configured to automate and coordinate dismantling operations to optimize efficiency, reduce manual intervention, and improve material recovery quality.

No. of Pages : 42 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033079 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Quantum-Resistant Blockchain Consensus Mechanism Using Post-Quantum Cryptography

(51) International classification :H04L0009080000, H04L0009320000, H04L0009000000, H04L0009060000, H04L0009300000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
This invention presents a quantum-resistant blockchain consensus mechanism that leverages post-quantum cryptographic (PQC) algorithms to safeguard digital transactions from quantum computing threats. By integrating lattice-based and hash-based cryptographic signatures with a hybrid Proof-of-Stake (PoS) model, the system ensures both security and energy efficiency. Validator nodes utilize quantum-resistant digital signatures to authenticate transactions, maintaining blockchain integrity even against advanced decryption methods. Designed for scalability, the mechanism supports lightweight verification, making it suitable for IoT and edge-computing applications. Furthermore, the system incorporates backward compatibility, allowing seamless integration with existing blockchain networks while gradually transitioning to full quantum resistance. By securing cryptocurrency transactions, digital identity management, and government-backed digital currencies (CBDCs), this invention provides a future-proof solution against evolving cryptographic vulnerabilities.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033080 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An Automated Shaft Maintenance Device for In-Situ Repair of Plain Shafts in Industrial Machinery

(51) International classification	:G06Q0010200000, F01D0005000000, B25J0009000000, G06Q0010063100, H05K0005020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: An Automated Shaft Maintenance Device for In-Situ Repair of Plain Shafts in Industrial Machinery The present disclosure proposes an automated shaft maintenance device (100) for precision material removal, repair mix application, and surface finishing without requiring shaft disassembly. The automated shaft maintenance device (100) comprises a cylindrical clamping frame (102), a set of holders (104), a screwed shaft (106), at least two sliders (108A, 108B), a driving unit (110), a telescopic actuator (112), a blade (114), a drive module (116), a repair mix unit (118), a levelling member (120), and a control unit (122). The automated shaft maintenance device (100) performs in-situ shaft repairs, eliminating the need for disassembly and transportation, significantly reducing downtime. The automated shaft maintenance device (100) reduces reliance on highly skilled workers, allowing them to focus on other maintenance tasks and minimizing human error in repair operations.

No. of Pages : 38 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033085 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Privacy-Preserving Federated Learning with Homomorphic Encryption for Healthcare Analytics

(51) International classification :G06F0021620000, H04L0009000000, G06F0021600000, G06N0020000000, H04L0009400000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention introduces a secure federated learning framework that integrates homomorphic encryption (HE) to facilitate privacy-preserving AI model training across multiple healthcare institutions. Unlike conventional machine learning approaches that require data centralization, this system allows institutions to train models locally while transmitting only encrypted updates to a central aggregator. The HE mechanism ensures computations can be performed directly on encrypted data, eliminating the need for decryption and safeguarding sensitive patient information. By enabling collaborative AI development without exposing raw data, the system significantly reduces the risk of data breaches and unauthorized access. It also supports compliance with stringent privacy regulations such as GDPR and India's Digital Personal Data Protection Act (DPDPA). The invention enhances secure multi-party medical research, predictive analytics, and AI-driven diagnostics. Designed for large-scale healthcare applications, it improves AI model generalization while maintaining data confidentiality across institutions.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033087 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : REWRITING THE BLACK DISABLED BODY: AFROFUTURIST CHALLENGES TO ABLEIST NARRATIVES IN BLACK PANTHER

(51) International classification :G06Q0050100000, A61K0009190000, A61K0035640000, F24S0070100000, F24S0070225000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Rewriting the black disabled body: Afrofuturist challenges to ableist narratives in black panther is the proposed invention. Afrofuturism has developed into a significant cultural and artistic phenomenon that conceptualises a future in which Black identity, speculative fiction, and technological progress converge to interrogate colonial legacies and social inequities. In the context of this movement, disability constitutes an underexamined yet essential factor, influencing the construction of the Black body within futuristic and technologically advanced societies. The film Black Panther (2018), in conjunction with its role within Marvel Comics, presents a significant shift from conventional portrayals of disability by reconceptualising it through the lens of Afrofuturism. This article analyses the ways in which Black Panther challenges and redefines disability and its erasure using technology as a cure, reinterprets racialised and ableist conceptions of disability demonstrating how disability is either rendered invisible, transformed through technology, or reimagined as a source of power.

No. of Pages : 16 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033132 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AN ASSEMBLY AND A METHOD FOR DRAINING PLEURAL FLUID FROM A PLEURAL CAVITY

(51) International classification :A61M0001000000, A61M0025000000, A61B0017340000, A61B0017000000, A61M0039220000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
An assembly (100) for draining pleural fluid from a pleural cavity is provided. The assembly includes aa sterile blade (110) to make a first incision and a second incision at a location of pleural fluid of a patient, and a curved steel tunneller (115) to create a subcutaneous tunnel between the incisions for inserting an indwelling pleural catheter (120). A syringe with a needle (125) aspirates pleural fluid through the second incision, confirming needle placement before inserting a guide wire (130) into the pleural cavity and facilitates removal of the needle. A steel dilator (135) dilates the pleural cavity entrance, and a steel semi-sheath introducer with a trocar assists catheter insertion. The indwelling pleural catheter facilitates fluid drainage, secured by a suture. A 3-way stopcock (150) controls fluid flow, while a compressible suction drainage unit (155) activates fluid removal. FIG. 1

No. of Pages : 27 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033134 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN IMAGE RECOGNITION SYSTEM AND METHOD FOR ENHANCED MEDICAL DIAGNOSIS

(51) International classification :G06N0003045000, G06N0003080000, G06T0007000000, G16H0030400000, G16H0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[033] The present invention relates to an AI-powered medical image recognition system designed to enhance diagnostic accuracy and efficiency through advanced deep learning techniques. The system integrates an image acquisition module for collecting medical images from various modalities, a preprocessing unit for quality enhancement, an AI-based image analysis engine for anomaly detection and classification, a diagnosis interpretation module providing explainable AI insights, and a secure cloud-based storage unit for seamless data access. By leveraging convolutional neural networks (CNNs) and transformer-based models, the system enables automated detection of diseases while maintaining transparency through visual annotations and confidence scores. The clinician interface allows interactive validation and feedback, ensuring continuous model improvement. The system is interoperable with hospital infrastructure, supports telemedicine applications, and complies with healthcare regulations, making it a scalable and reliable solution for AI-assisted medical diagnostics across multiple specialties. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033152 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Screw Cutting Device for Preventing Feed Blockages in a Cone Crusher and Method Thereof

(51) International classification :B02C0002040000, B02C0002000000, H04W0052020000, B23B0005460000, B02C0021000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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(57) Abstract :
ABSTRACT: Title: A Screw Cutting Device for Preventing Feed Blockages in a Cone Crusher and Method Thereof The present disclosure proposes a screw cutting device (100) to efficiently crush oversized boulders (14) that cause feed blockages in a cone crusher (10). The screw cutting device (100) comprises a support frame (102), a driving unit (108), a supporting bracket (114), a tapered screw blade (128), and a controller (112). The screw cutting device (100) is easily integrated into existing cone crushers without significant modifications, providing a versatile and cost-effective solution for improving crusher performance. The screw cutting device (100) reduces energy consumption associated with frequent shutdowns and restarts, contributing to a more sustainable operation. The screw cutting device (100) continuously clears oversized materials, enabling the cone crusher (10) to process materials without delays, leading to higher throughput and increased productivity.

No. of Pages : 25 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033153 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An Automated Drop-Set Pin Unlocking Device for Optimized Weightlifting Workouts and Method of Operation

(51) International classification :A63B0024000000, A63B0071060000, A63B0021078000, A61B0005110000, A63B0021072000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT: Title: An Automated Drop-Set Pin Unlocking Device for Optimized Weightlifting Workouts and Method of Operation The present disclosure proposes an automated drop-set pin unlocking device (100) that adjusts drop-set units in weightlifting machines, thereby eliminating a need for manual insertion and removal of the drop-set units and enabling seamless transitions between weight loads during training. The automated drop-set pin unlocking device (100) comprises a housing (102), a driving unit (106), a actuating unit (110), a plurality of drop-set units (112), and a controller (126). The proposed device (100) accurately tracks repetitions and identifies incomplete lifts, thereby assisting users in maintaining workout consistency. The proposed automated drop-set pin unlocking device (100) enhances overall workout efficiency and effectiveness by streamlining weight transitions and promoting proper form. The proposed automated drop-set pin unlocking device (100) provides instant alerts in response to errors, abrupt movements, or jerky motions, ensuring smooth and controlled lifting.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033154 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A Hand-Held Tool for Fuel Injector Removal with Controlled Force Application and Method of Operation

(51) International classification :F02M0061140000, B25B0027020000, F02M0065000000, F02M0061160000, F02M0053060000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
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(57) Abstract :
ABSTRACT: Title: A Hand-Held Tool for Fuel Injector Removal with Controlled Force Application and Method of Operation The present disclosure proposes a hand-held tool (100) for fuel injector (10) removal that reduces manual effort, ensures efficient and damage-free, and time-saving during the removal process of fuel injectors (10) from internal combustion engines. The hand-held tool (100) comprises a body (102), a shaft member (128), a holder (108), a sliding member (116), and a handle (124). The proposed hand-held tool (100) ensures proper removal the fuel injector (10) without damage, thereby contributing to better engine maintenance, improving fuel efficiency and reducing emissions. The proposed hand-held tool (100) is adapted for automotive applications and utilized for fuel injector maintenance in industrial engines, marine engines, and heavy machinery. The proposed hand-held tool (100) preserves approximately 40 litres of fuel per vehicle annually, thereby reducing at least carbon dioxide emissions per vehicle.

No. of Pages : 31 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033155 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An Automated Cutting and Cleaning Device for Asbestos Pipes and Method of Operation

(51) International classification	:B08B0003020000, B26D0007010000, B08B0015020000, B26D0007180000, B29B0007900000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: An Automated Cutting and Cleaning Device for Asbestos Pipes and Method of Operation The present disclosure relates to an automated cutting and cleaning device (100) for asbestos pipes (10) that enables efficient, precise, and safe removal of asbestos lagging while significantly reducing human exposure to hazardous asbestos fibers. The automated cutting and cleaning device (100) comprises a first mounting assembly (102), a second mounting assembly (110), and a carriage assembly (120). The automated cutting and cleaning device (100) is designed to minimize asbestos fiber dispersion, thereby ensuring enhanced worker safety during asbestos removal. The automated cutting and cleaning device (100) accommodates various pipe sizes, features self-cleaning capabilities, and provides repeatable, consistent cutting and cleaning performance. Additionally, the automated cutting and cleaning device (100) is designed to be lightweight, portable, and user-friendly, thereby ensuring ease of operation in industrial asbestos abatement applications.

No. of Pages : 35 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :03/04/2025
(21) Application No.202541033156 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Handheld Weed Extraction Device for Agricultural Applications and Method of Operating the Same

(51) International classification :A01B0001160000, A61B0005150000, F16M0013040000, H01L0021677000, B01D0011040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: Handheld Weed Extraction Device for Agricultural Applications and Method of Operating the Same The present disclosure proposes a handheld weed extraction device (100) that enables effortless and complete weed removal. The handheld weed extraction device (100) comprises a housing (102), a handle (104), an intermittent rotation unit (106), a reciprocating unit (132), and a clamping unit (146). The handle (104) is configured to provide a secure grip to a user, thereby ensuring stable handling and enabling seamless operation throughout a weed extraction process. The intermittent rotation unit (106) is configured to transfer controlled rotational motion during the weed extraction process for effectively removing at least one weed plant (10) along with roots. The reciprocating unit (132) is configured to enable efficient soil penetration during the weed extraction process. The clamping unit (146) is configured to enable secure gripping and controlled release of the at least one weed plant (10).

No. of Pages : 38 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033158 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : REVIVEFIT AN FITNESS ASSISTANT SPECIFICALLY ENGINEERED FOR INDIANS

(51) International classification	:G06F0040300000, G16H0020300000, G10L0015260000, G06N0020100000, G10L0015180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

This paper introduces an innovative AI fitness assistant that leverages Natural Language Processing (NLP) to enhance user interactions and optimize personalized fitness experiences. The assistant utilizes advanced NLP techniques to understand and process user inputs, including fitness goals, preferences, and feedback, delivered through conversational interfaces such as voice or text. By integrating NLP with machine learning algorithms, the system can dynamically generate customized workout plans, offer real-time guidance, and adjust recommendations based on ongoing user interactions. This approach allows for a more intuitive and engaging user experience, as the AI can interpret natural language queries and adapt its responses accordingly. The paper discusses the system's architecture, including the NLP model's role in extracting and analyzing user intent, and how it integrates with fitness tracking data to provide actionable insights. Additionally, it evaluates the effectiveness of this NLP-driven assistant in improving user adherence to fitness programs and overall satisfaction. The study highlights the potential of combining NLP with AI to create a more personalized and interactive fitness solution, while also addressing challenges such as maintaining context and handling diverse user inputs.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/04/2025

(21) Application No.202541033159 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : OPTIMIZING FEEDER PERFORMANCE: A CURRENT-BASED PROTECTION SYSTEM FOR EFFICIENT FAULT DETECTION AND MITIGATION

(51) International classification	:H02H0003080000, H02H0003050000, H02H0003330000, H02H0001000000, H02H0003020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

This project focuses on protecting a bus bar from overload, short circuit, and earth fault conditions within a power system. Overload occurs when excessive current flows due to unbalanced loads. Distribution transformer primary windings are designed for specific current levels; exceeding these can cause damage. This project aims to protect the bus bar from overload by tripping the circuit using a relay and indicating the fault with a buzzer and LED. Under normal conditions, the resultant current is zero in a three-phase system. However, imbalances cause a non-zero resultant current. If this exceeds a predefined value, the relay trips the circuit. Key components include an Arduino microcontroller, ACS712 current sensors, and relays for automated fault detection and isolation. The system is designed to protect feeders by continuously monitoring current levels and responding to abnormal conditions in real-time. The integration of audio-visual warnings further enhances user awareness. This system enhances reliabi

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033162 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVELOPMENT OF POLYETHYLENE TEREPHTHALATE (PET) STRAND REINFORCED FLOOR TILES

(51) International classification	:E04F0015020000, B29B0017000000, B29L0031000000, C09D0005030000, C08J0003000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
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No. of Pages : 13 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033175 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FAKE JOB REQUIREMENTS IDENTIFICATION THROUGH DEEP LEARNING MODELS

(51) International classification :G06N0003080000, G06Q0010105300, H04L0009400000, G06N0003045000, G06N0003044000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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FAKE JOB REQUIREMENTS IDENTIFICATION THROUGH DEEP LEARNING MODELS Abstract: The rise of online job portals has significantly streamlined the job search process, allowing job seekers and employers to connect efficiently. However, this convenience has also led to a surge in fraudulent job postings designed to scam individuals through phishing, identity theft, and financial fraud. Traditional rule-based fraud detection mechanisms struggle to keep up with the evolving nature of fake job postings. This invention proposes an AI-powered fake job detection system leveraging deep learning models such as BERT (Bidirectional Encoder Representations from Transformers) and LSTM (Long Short-Term Memory Networks). The system processes job descriptions, analyzes linguistic patterns, and classifies job postings as real or fake with high accuracy. The methodology includes data collection from various job portals, text preprocessing, feature extraction, model training, and deployment in a real-time environment. The proposed solution offers a robust, scalable, and automated mechanism to combat fraudulent job postings by continuously learning from new scam patterns. This enhances trust in online job platforms, protects job seekers from scams, and reduces operational costs for recruitment portals. The model's real time detection capability provides instant feedback to users, thereby minimizing risks associated with fake job offers.

No. of Pages : 14 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202541033190 A

(19) INDIA

(22) Date of filing of Application :04/04/2025

(43) Publication Date : 25/04/2025

(54) Title of the invention : A NEW WEATHER-ADAPTIVE INTELLIGENT STREET LIGHTING SYSTEM WITH REAL-TIME CONTROL AND FAULT DETECTION

(51) International classification	:F21S0008080000, G05F0001670000, H05B0047110000, H02J0003380000, H05B0047115000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT: Electricity continues to be a topic of frequent debates in everyday life, with solar gaining popularity as a renewable energy source mainly due to its sustainability. As a result, making good use of our natural resources is important for saving money as well as perfonnance. In this paper, we investigate the feasibility of a microcontroller based charge controller with a solar photovoltaic (PV) system for smart lighting specifically, street lighting. Solar modules usually cannot ensure maximum power transfer by themselves as to protect themselves for not performing to impedance match as stated in the maximum power transfer theorem, and so a maximum power point tracking (MPPT) is employed. The microcontroller performs control of the output of the converter, and there are sensors that measure the power of the PV module and send information to the microcontroller. The microcontroller adjusts the duty cycle of the converter to keep outputting maximum output power - to the light by observing the change from instantaneous power to the previous instantaneous power, as measured continuously. The boost converter makes MPPT possible, using the P&O algorithm for extracting maximum power from the PV panel. The final implementation of the smart streetlight system consists of LED light, brightness and motion sensors, and cloud connectivity . Traditional lighting systems are traditionally kept on throughout the night, even if there are no vehicles, or perhaps road usage is reduced near the light, they stay on. The proposed system promotes sustainability through functions such as automated day/night operation, adaptive brightness based on the presence of vehicles or pedestrians, and fault detection. By preventing energy waste, smart lighting can reduce energy use, pollution, maintenance costs, and CO, emissions, penetrating environmental, sustainability and economic objectives.

No. of Pages : 11 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033196 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Agentic Fracture Detection: A Multi-Agent Fusion of Faster R-CNN and Vision-Language Models

(51) International classification :G06T0007000000, G06N0003045000, G16H0050200000, G16H0010600000, A61B0006000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Agentic Fracture Detection: A Multi-Agent Fusion of Faster R-CNN and Vision-Language Models Abstract: The detection of bone fractures from X-ray images plays a pivotal role in the realm of medical diagnosis, often requiring the expertise of trained professionals for accurate analysis. In this context, we introduce Agentic Fracture Detection (AFD), a groundbreaking approach that seamlessly integrates the capabilities of Faster R-CNN for precise fracture segmentation with advanced vision-language models (VLMs) to enhance the interpretability of results and provide robust decision support. Our innovative system is composed of four distinct AI agents, each with a specialized function: (1) the Perception Agent, which adeptly identifies fractures through the application of Faster R-CNN; (2) the Reasoning Agent, which meticulously assesses the severity of detected fractures; (3) the Interpretation Agent, which generates comprehensive, human-readable reports by leveraging a vision-language model; and (4) the Decision Agent, which offers well informed recommendations for subsequent diagnostic and treatment steps. The experimental results obtained from our approach reveal a significant improvement in the accuracy of fracture detection, coupled with the provision of interactive, AI-assisted reports tailored for radiologists. This innovative methodology not only enhances the analysis of medical imaging but also makes fracture detection more precise, understandable, and supportive for healthcare professionals, ultimately contributing to better patient outcomes.

No. of Pages : 18 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025

(21) Application No.202541033199 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DESIGN AND FABRICATION OF LOW-COST DEHUMIDIFYING ENCLOSURE FOR 3D PRINTING FILAMENT STORAGE

(51) International classification	:H01M0010625000, B41M0005000000, B01D0053260000, C08K0005000000, H01L0023367000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention presents the design and analysis of a low-cost dehumidifying enclosure for moisture dissipation for 3D printing filament storage. The objective is to create an environment that minimizes moisture absorption and ensures consistent filament quality during the printing process. The enclosure is constructed using mild steel, chosen for its durability and thermal conductivity. A heating system is incorporated to raise the temperature within the enclosure, facilitating moisture evaporation and reducing the likelihood of condensation. The thermal analysis considers factors such as heat distribution, insulation, and temperature control to optimize the dissipation process. Key considerations in the design include the moisture removal source within the enclosure, a type of heating system, thermal management, temperature control mechanisms, and safety precautions. It addresses energy efficiency to minimize operational costs. The proposed design offers advantages such as enhanced moisture control, improved

No. of Pages : 11 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033205 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR AUTOMATED CHARACTER RECOGNITION OF DANCE PERFORMANCES AND METHOD THEREOF

(51) International classification	:G06N0003080000, G06V0010820000, G06N0003045000, G06V0010764000, G06F0040300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
Embodiments of the present disclosure relate to a system (102) and method (200) for automated character recognition of dance performances. The system includes a memory (204) coupled to one or more processors (202). Video frames and images of dance performances are processed by a deep learning-based model (212). The system (102) employs a domain-specific feature extraction module (214) trained to identify dance postures, hand gestures, and facial expressions unique to South Indian folk dance. A convolutional neural network (CNN) (216) is trained on curated dataset incorporating variations in lighting, costumes, and movement dynamics. The classification module (218) categorizes detected features into predefined folk dance character classes while enhancing recognition accuracy against occlusions, costume changes, and lighting variations.

No. of Pages : 22 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033224 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A DEVICE FOR BIAXIAL COMPRESSION CREEP TESTING

(51) International classification :G01N0003020000, G01N0035040000, G01N0003120000, B64F0005600000, G01N0019020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A device for biaxial compression creep testing of a sample (10) is disclosed. The device includes a vertical loading assembly (101) and a lateral loading assembly (102) configured to apply a vertical load and a lateral load on the sample (10) respectively. Each of the vertical loading assembly (101) and the lateral loading assembly (102) includes a plurality of lever arms (103), a plurality of vertical members (104) and a hydraulic cylinder (105). The hydraulic cylinder (105) is configured to transfer the load from the plurality of lever arms (103) to the sample (10). Further, the device (100) includes a plurality of columns (106) to support the vertical loading assembly (101) and the lateral loading assembly (102). Furthermore, the device includes a conversion mechanism (1071) configured to convert vertically applied load to a horizontal load to apply the lateral load on the sample (10). Figure 3 is the representative figure.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033229 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IT LIFECYCLE MANAGEMENT: INTEGRATING BUSINESS STRATEGY WITH TECHNOLOGICAL EXECUTION

(51) International classification	:G06Q0010063700, G06Q0010063100, G06Q0010063000, G06Q0010063900, G06Q0010060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
IT LIFECYCLE MANAGEMENT: INTEGRATING BUSINESS STRATEGY WITH TECHNOLOGICAL EXECUTION ABSTRACT This invention presents an integrated IT Lifecycle Management system designed to align technological execution with evolving business strategies. It introduces a strategic mapping engine that links IT assets and projects to key business objectives. The invention employs analytics and AI to provide actionable insights across the lifecycle. Real-time dashboards and governance modules support agile execution and compliance. It ensures continuous alignment via feedback loops and cross-functional collaboration tools. A cloud-based infrastructure provides scalability and integration with existing enterprise systems. Scenario planning capabilities prepare IT systems for business shifts or disruptions. The invention enhances operational efficiency, strategic agility, and investment value. It reduces silos between departments by fostering transparency and accountability. This approach transforms IT from a support function into a strategic enabler.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033254 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EXTRACTION OF DITERPENOIDS FROM EUPHORIA TIRUCALLI (PENCIL CACTUS) FOR ANTICANCER APPLICATIONS

(51) International classification	:A61P0035000000, A61P0043000000, A61K0036330000, A61P0031000000, G01N0033500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Diterpenoids, a class of bioactive compounds with significant pharmacological properties, have shown promising potential in cancer 'treatment due to their cytotoxic and apoptotic effects. This study focuses on the extraction, chamcterization, and evaluation of diterpenoids from Euphorbia tirucalli (pencil cactus) for anticancer applications. The plant material was subjected to solvent extraction, followed by chromatographic and spectroscopic techniques for compound isolation and identification. The anticancer acti\•ity of the diterpenoid-rich extract was assessed using in vitro assays on selected cancer cell lines, evaluating C)1otoxicity, apoptosis induction, and oxidative stress modulation. Preliminary findings indicate significant anticancer potential, suggesting that Euphorbia tirucalli could serve as a valuable natural source for developing novel cancer therapeutics. Further investigations into its molecular mechanisms and potential clinical applications are warranted.

No. of Pages : 6 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033256 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Emotion Detection using CNN with FER 2013 Dataset

(51) International classification :G06V 10/82, G06N 3/045, G06N 3/02
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Emotion Detection using CNN with FER 2013 Dataset Abstract Facial emotion detection is a vital area in computer vision and artificial intelligence, with applications ranging from human-computer interaction to healthcare monitoring. This project proposes an Emotion Detection System using Convolutional Neural Networks (CNN), leveraging the FER 2013 dataset for accurate classification of facial expressions into seven distinct categories: Anger, Disgust, Fear, Happiness, Sadness, Surprise, and Neutral. Unlike traditional methods that rely heavily on handcrafted features, this approach utilizes the powerful feature extraction capabilities of CNNs to automatically learn and detect emotional patterns from facial images. The FER 2013 dataset, consisting of 35,887 grayscale images, is preprocessed using normalization, resizing, and augmentation techniques to enhance model performance and reduce overfitting. A customized CNN architecture is implemented, comprising convolutional layers, pooling layers, dropout layers for regularization, and fully connected layers for classification. The softmax activation function is applied in the output layer for multi-class classification. The system is evaluated using metrics such as accuracy, precision, recall, and F1-score to measure its effectiveness. The proposed model achieves high classification accuracy, demonstrating robust generalization across different facial expressions. Additionally, this work includes model optimization through hyperparameter tuning and explores the integration of techniques such as Batch Normalization and Data Augmentation to further enhance accuracy. The trained model is deployed using a Python-based application that allows real-time emotion detection via webcam input. This system has significant potential in real-world applications, including mental health monitoring, customer sentiment analysis, virtual assistants, and gaming environments. Furthermore, it contributes to the advancement of AI systems that can interpret human emotions, enhancing the user experience and enabling more personalized interactions. The research also opens avenues for further development in multimodal emotion recognition by combining facial expressions with voice and physiological data for improved accuracy.

No. of Pages : 9 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033258 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE STEERING CONTROL SYSTEM FOR AUTONOMOUS VEHICLES ON UNEVEN TERRAIN

(51) International classification	:G05D0001000000, B62D0006000000, B60W0010200000, G06T0017050000, B60W0010180000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The invention relates to an adaptive steering control system for autonomous vehicles, incorporating real-time terrain assessment and dynamic drive mode adjustments. The system employs a Raspberry Pi 4 (1 01), a camera module (1 02), multiple sensors (1 03), and Al-based decision-making to optimize vehicle control on uneven surfaces. By integrating machine learning for terrain classification (1 05) and Generative AI (1 06) for external data acquisition, the system enhances vehicle stability, safety, and energy efficiency. The proposed technology ensures seamless navigation across urban, off-road, and agricultural environments, making autonomous vehicles more adaptable to diverse driving conditions.

No. of Pages : 8 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025

(21) Application No.202541033261 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADVANCED CHAOTIC IMAGE ENCRYPTION SYSTEM USING CONVOLUTIONAL NEURAL NETWORKS

(51) International classification	:G06N0003045000, H04L0009000000, G06T0001000000, G06V0010440000, G06V0010820000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention discloses an advanced image encryption system integrating chaotic image encryption with convolutional neural networks. The invention leverages the unpredictability of chaotic sequences and the feature extraction capabilities of CNNs to achieve highly secure encryption. Experimental results demonstrate the algorithm's effectiveness in improving encryption security, randomness, and computational efficiency. The proposed system provides a scalable and robust solution for digital image protection in sensitive applications such as loT, healthcare, and military security.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033266 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DESIGN AND IMPLEMENTATION OF AUTO CHARGING IN ELECTRIC VEHICLE

(51) International classification :B60L50/60, B60L58/10, B60L3/12, H02J7/00, G16Y40/10
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Electric Vehicle is an innovative, eco-friendly transportation solution designed to revolutionize the way people navigate short distances. Similar to escooters, Vehicle provides a convenient, affordable, and sustainable alternative to traditional modes of transportation. With a user-friendly interface and a vast network of stations, it enables users to quickly and easily rent and return vehicles, reducing traffic congestion and promoting a healthier environment. By leveraging advanced technologies and data analytics, the optimizes its by fleet management, ensuring maximum efficiency and reliability. This paper presents the design, implementation, and its benefits , highlighting its potential to transform urban mobility and contribute to a more sustainable future.

No. of Pages : 8 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033272 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DESIGN AND ANALYSIS OF MULTIBAND ARRAY ANTENNA SYSTEM FOR IOT APPLICATIONS

(51) International classification	:H01Q0001520000, H01Q0005250000, H01Q0001380000, H01Q0021000000, H04L0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a multiband ultra-wideband (UWB) antenna array designed for loT applications, operating in the 3-25 GHz frequency range: The design incorporates stripline excitation networks, defected ground structures (DGS), and elliptical radiators to improve gain, bandwidth, and impedance matching. The proposed antenna achieves high gain (up to 14.5 dBi), low mutual coupling, and compact size, making it ideal for loT, radar, and 5G wireless communication. The invention ensures enhanced performance, stable radiation patterns, and efficient power distribution, making it a robust solution for next-generation wireless technologies.

No. of Pages : 8 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033276 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : REAL TIME BATTERY MONITORING SYSTEM USING GSM

(51) International classification :H01M10/42, G08C17/02, G08B5/22, G08B3/10
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
The growing reliance on battery-operated devices across vari..o. us industries, including health care, transportation, and consumer electronics, highlights the need for dependable systems to oversee and manage battery health. This study introduces a real-time battery monitoring system utilizing the GSM to enhance UPS(Uninterrupted Power Supply) battery performance, longevity, and safety. The system incorporates voltage divider that measure essential parameters such as voltage and state of charge (SOC) in real time. The data gathered from this voltage divider is wirelessly sent to offering insights into battery health and forecasting potential failures. Additionally, the system provides users with real-time alerts and notifications for preventive maintenance. The GSM-based method presents numerous be.nefits, including remote monitoring, data logging, and predictive analytics, making it a practical solution for various applications. This proposed system improves battery management,.minimizes downtime, and prolongs the operational life of devices reliant on batteries, leading to more efficient energy use and enhanced device reliability.

No. of Pages : 7 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033278 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : OPTIMIZED AGRICULTURAL PEST CONTROL USING DELAY DIFFERENTIAL EQUATIONS AND STOCHASTIC DIFFERENTIAL EQUATIONS

(51) International classification :G06F0007580000, F23J0015000000, G06F0017130000, F23J0015020000, F23L0015040000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention uses Delay Differential Equations (DDEs) and Stochastic Dif!"erential Equations (SDEs) for efficient pest control in agriculture. It, rnodels pest behavior and interactions with plants, incorporating time delays and environmental randomness. This approach optimizes pest control strategies, improving effectiveness and sustainability.

No. of Pages : 14 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033279 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : "WELLNESS WEAVE: ADVANCING PEDIATRIC HIV CARE THROUGH WEARABLE TECHNOLOGY AND MATHEMATICAL MODELING"

(51) International classification :A61B0005000000, A61B0005020500, A61B0005145000, A61B0005010000, A61B0005021000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Monitoring nutritional status and immune health plays a vital role in managing HIV in children. This proposed invention integrates models with existing wearable health monitoring devices and portable CD4 testing devices and analyzes the nutritional trends and dynamics of the immune system of children. The proposed model incorporates a system of non-linear differential equations, stochastic models, and time series analysis to forecast CD4 count variations and assess ART adherence patterns. The model's effectiveness and accuracy are evaluated through stability analysis and sensitivity analysis. By providing a data-driven approach, this model aims to optimize the intervention strategies and provide alerts to the caregivers in the case of health deterioration and offers valuable insights through predictive analysis of the health trends of children living with HIV.

No. of Pages : 12 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033280 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A MULTILEVEL IMAGE SEGMENTATION SYSTEM USING AN ENHANCED WHALE OPTIMIZATION ALGORITHM

(51) International classification :H04W0084180000, H02J0007000000, G06Q0010063100, G06Q0050060000, H04W0072230000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a dual-mobile charger system for wireless sensor networks (WSNs), utilizing a Collaborative Charging Scheduling Algorithm (CCSA) for optimized energy distribution. The system integrates Al-driven predictive analytics and adaptive path planning to improve sensor network efficiency and longevity. The invention ensures reduced latency, enhanced sensor uptime, and efficient power management in WSNs.

No. of Pages : 8 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033288 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR EARLY DETECTION AND DIAGNOSIS OF RETINOPATHY OF PREMATURITY IN PREMATURE INFANTS

(51) International classification	:G06T0007000000, G06T0007110000, A61B0003120000, G16H0050200000, G06F0018241000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT The present invention relates to a computational intelligence-based decision support system for Retinopathy of Prematurity (ROP) detection. It segments the Optic Disc (OD) and Blood Vessels (BVs) to accurately localize the macula for ROP staging. Retinal fundus images from the HVDROPDB Ret Cam Neo Segmentation dataset are used for training and evaluation. A U-Net-based deep learning model enables precise blood vessel segmentation, 10 while a hybrid CNN-Trans former model enhances classification accuracy. Feature extraction utilizes the Gray Level Co-occurrence Matrix (GLCM) and contour-based methods. The Rider Optimization Algorithm optimizes Gaussian process hyperparameters for tracking vascular structures. The system efficiently detects, stages, and monitors ROP progression, supporting early intervention and improved clinical outcomes.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033293 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATED ANEMIA DETECTION SYSTEM WITH TELEGRAM BOT INTEGRATION

(51) International classification	:G06T0007110000, A61P0007060000, G06N0003045000, G06N0003080000, A61B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract: The present invention provides an Al-driven, non-invasive anemta detection system that utilizes deep learning and computer vision to analyze eye conjunctiva images captured by a smart phone camera. The system includes segmentation and classification models, a Telegram bot interface, and cloud-based deployment forreal-time anemia screening. The proposed invention eliminates the need for blood tests, making anemia detection fast, cost-effective, and accessible in remote areas. (JF

No. of Pages : 7 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033294 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR AI-DRIVEN LUNG DISEASE DIAGNOSIS USING HYBRID ANT COLONY-GOLDEN JACKAL OPTIMIZATION ALGORITHM

(51) International classification :G06N0003045000, G06N0003006000, G16H0050200000, G06T0007000000, G16H0040670000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
Abstract: This invention presents an A 1-based system for lung disease diagnosis using medical imaging. A hybrid algorithm combining Ant Colony Optimization (ACO) and Golden Jackal Optimization (GJO) enhances feature selection and hyperparameter tuning in deep neural networks. ACO identifies critical imaging features, while GJO minimizes computational overhead for real-time edge device analysis. Explainable AI (XAI) modules generate clinician-interpretable heatmaps. Testing on multi-source datasets achieved 97% accuracy, surpassing conventional methods. Applications include telemedicine and lowresource healthcare.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033297 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ELECTRICITY GENERATION USING PARACHUTE LIKE HELIUM BALLOON

(51) International classification	:F03D0009250000, B62D0035000000, F03D0009110000, F03D0009320000, F03D0001060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
"ELECTRICITY GENERATION USING PARACHUTE LIKE HELIUM BALLOON" Power generation using wind energy is the prime interest of the invention. Wind turbine is the most commercialized technology and it requires huge investment. Aerodynamics study on blade design, vertical tower, and heavy foundation is the key issues to be addressed. Many alternative methods are invented to tap wind energy 15 using balloon and kites. Parachute offers large air resistance for human to glide through air against gravity. The air resistance can be used to oscillate parachute, which can be converted into electrical power. A lift force adds additional resistance that increases oscillation of parachute. When the air velocity comes down, the parachute slides down to ground. To make it afloat in air forever, helium gas or 20 hydrogen gas can be used. The density of these gases are tenfold less than air. The buoyancy force due to density difference makes it fly forever. The wind force oscillates parachute in the air that can be converted ·into electricity using generator. "e"n"' 25 To increase oscillation, life force is enhanced by designing the cross section of parachute in to airfoil shape. This invention is best suited for producing energy from wind region close to hill station. Electrical lines are difficult to reach hill top and remote forests. Therefore, this method is best suited to power remote applications. In addition, the power generation can be set up in a mobile truck easily. It can be easily relocated from place to place. Figure I shows the computer-aided design of the apparatus

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033301 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DUAL FUEL MODE DIRECT METHANOL FUEL CELL

(51) International classification	:H01M0008101100, H01M0008041860, F02D0019060000, H01M0008100900, H01M0008040820
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
ABSTRACT OF THE INVENTION "DUAL FUEL MODE DIRECT METHANOL FUEL CELL" Liquid Methanol has superior volumetric energy density compared to gaseous hydrogen gas. However, the potential of methanol is under-utilized in Direct Methanol Fuel Cell (DMFC) due to poor electrochemical reaction, methanol cross over and gaseous C02 bubble formation. Though methanol has high energy density, power output from DMFC is ten times lower than the hydrogen fuel cell. In order to 15 enhance power output, the hydrogen is humidified with diluted methanol, which is supplied as dual fuel. The catalyst layer used for DMFC is capable of handling both hydrogen and diluted methanol. The catalyst loading used is ten times more than hydrogen fuel. So, electrochemical reaction is very much improved that improves electrical output. Since, methanol is vaporized in the humidification process, DMFC 20 does not suffer by cross over loss. It results into increased fuel efficiency. The C02 gas will be in dissolved phase with fuel. In general, the diluted methanol supplied in conventional DMFC limits its concentration. Above two molar concentration, the cross over loss is found very high and power output reduced drastically. The present invention of dual fuel can enhance methanol concentration level to a maximum 25 extent of neat methanol (Pure methanol). Further, the pump requirement is eliminated because of compressed hydrogen gas cylinder. It reduces cost and complexity of design. Therefore, the DMFC with dual fuel mode can be used for remote places and small power applications like material handling units in warehouse. In addition, methanol fuel does not freeze up to - 90° C, thus it is convenient to power battery at 30 very low temperature regions like Himalayas.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033302 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : PROCESS FOR THE PREPARATION OF INDUSTRIALLY DISCOUNTED WASTE MATERIALS FILLED POLYMER COMPOSITES FOR PREPARING POTTERY WARES AND TABLE-TOP PANELS

(51) International classification	:C08J0005040000, H01M0010052500, B29C0048090000, C04B0026180000, H01L0023290000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention deals with the process for the production of industrial waste filled polymer composites for pottery wares and table-top panels using partially bio-based polymeric resins. Here, three different polymeric resins were used as a binding material for the production of polymer composites such as unsaturated polyester, DGEBA and bio-based hardener phenalkamine vanillin-isophorone diamine benzoxazine (V -ipda). the industrial waste like spent foundry sand from casting industries and fly grimes from granite cutting or polishing industries were used as filler materials. The equal weight percentage of Filler mixed thoroughly with polymeric binders (Resin I, Resin 2 and Resin 3) and cured at suitable temperature. The value of flexural strength of the Filler I (GFG) filled composites were observed for composite I, composite 2 and composite 3 at 43, 57 and 69 MPa respectively. The value of flexural strength of the Filler 2 (GFG/WFS) filled composites were observed for composite 4, composite 5 and composite 6 at 37, 44 and 56 MPa respectively. The polymer composites can be utilized for pottery wares and table-top panels .

No. of Pages : 17 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033309 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI DRIVEN ULTRASOUND TECHNOLOGY FOR WILDLIFE DETERRENCE AND HABITAT MONITORING

(51) International classification :A01M0029160000, A01M0029100000, A61B0008000000, A01M0031000000, A01K0029000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The growing concern over human-wildlife conflict and habitat degradation has prompted the need for innovative solutions that promote coexistence between human populations and wildlife. Traditional wildlife management techniques, such as physical barriers, relocation programs, or lethal control methods, often come with significant ethical concerns and environmental consequences. In this context, Al-driven ultrasound technology offers a promising, non-invasive alternative for both wildlife deterrence and habitat monitoring. This paper delves into the application of Al-driven ultrasound systems, which leverage artificial intelligence algorithms to generate ultrasonic sound waves that can influence animal behavior without causing harm. These ultrasound signals are tailored to specific frequencies that are designed to be unpleasant or disorienting to particular species, deterring them from entering areas where human activity is prevalent, such as agricultural fields, airports, or populated regions. Unlike traditional deterrent methods such as loud noises or visual disturbances, Al powered ultrasonic systems can be dynamically adjusted in real-time, learning from animal behaviour patterns and adapting the frequencies to increase efficacy and reduce habituation Moreover, ultrasound waves can also be utilized for continuous monitoring of wildlife and their habitats. By emitting high- frequency sounds, Al algorithms can detect the movements and presence of animals, capturing valuable data on population dynamics, species migration, and behavioral trends without direct interaction or disturbance. These systems can further provide insights into the health of the environment by detecting changes in the habitat, such as shifts in vegetation or the presence of potential hazards like predators or poachers. The real-time data collected can be integrated into conservation management platforms to aid researchers, park rangers, and policymakers in decision-making processes.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033315 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HELIUM CARRIER GAS TO TRANSPORT FUEL IN DIRECT METHANOL FUEL CELL

(51) International classification	:H01M0008101100, H01M0008041860, B01J0021180000, F02M0031180000, H01M0008040820
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Direct Methanol Fuel Cell (DMFC) pumps the diluted methanol to anode side using a peristaltic pump. This traditional, approach is suffered by methanol cross over and by-product as gaseous bubble. The cross over methanol from anode to cathode diminish the cathode electrochemical reaction by preventing the oxygen to reach the catalyst surface. Therefore, fuel discharging to cathode side reduces the fuel efficiency. It poses great challenge when diluted methanol concentration is increased more than two molar concentration. Higher methanol concentration increases power production capacity of DMFC. Therefore, vaporizing the fuel .eliminates excess methanol reaching cathode side. The methanol reaching active sites is consumed and no methanol is available in stagnant mode to reach cathode side. This increases fuel efficiency and power output of DMFC. In addition, the liquid methanol in anode side generates gaseous CO2 bubbles that blocks the porous volume through which methanol reaches catalyst surface. In order to change the liquid phase of transportation, helium gas is used to absorb the fuel in the vapor form. Helium gas is inert in nature and safe. The use of carrier gas for fuel supply does not affect electrochemical activity. When helium is carrying diluted methanol vapor, the gaseous bubbles cannot be generated. The by-product is vented out with fuel supply itself. The proposed method of carrying fuel in vapor form with carrying gas enhances fuel transportation to catalyst surface and enhances electrochemical activity. The gaseous phase of fuel supply makes the DMFC suitable to be operated with neat methanol alone.

No. of Pages : 13 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033318 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A PHOTOCATALYTIC REACTOR FOR EFFLUENT TREATMENT USING VARIOUS CATALYSTS

(51) International classification :C02F0001320000, C02F0001720000, B01J0019120000, B01J0035390000, C02F0001440000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION (to be given along with complete specification on separate page) The invention discloses a batch-type rectangular photocatalytic reactor designed for the treatment of industrial effluents using solar and/or UV light. The reactor accommodates various catalysts, facilitating efficient photocatalytic degradation of pollutants under optimized aeration and illumination. The system's modular design enhances light capture while minimizing energy consumption. A 22W mercury vapor UV lamp is integrated to ensure consistent UV exposure, aiding diverse catalytic processes. The reactor includes an impeller-based aeration system to improve mixing and mass transfer. This flexible system supports different catalysts and target effluents, providing a scalable and eco-friendly approach for wastewater remediation.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033319 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FUNCTIONAL SAFETY VALIDATION SYSTEM AND ASSOCIATED METHOD

(51) International classification :F02D0041400000, F02D0041020000, G06F0011360000, G06F0009455000, G06F0011220000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system and a cost-effective method for performing functional safety testing is provided. The method includes generating a bytecode that mimics a test condition associated with an application container (102A) to be tested, and verifying if an injection of the bytecode into a kernel memory space (124) introduces an error in behavior of an operating system (114A). Further, the method includes injecting the bytecode into the kernel memory space (124) only upon verifying that the injection of the bytecode does not introduce the error. Furthermore, the method includes successfully validating compliance of the application container (102A) with a functional safety standard when an output generated by the application container (102A) post injection of the bytecode into the kernel memory space (124) matches with an expected output. Moreover, the method includes automatically transmitting the validated application container (102A) to a target system (104) for associated deployment in the target system (104). FIG. 1

No. of Pages : 73 No. of Claims : 14

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033326 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Based Smart System for Real Time Dust Detection and Monitoring in Solar Panels

(51) International classification :G06F0018241100, G06N0003045000, G06N0003080000, H02S0020230000, H02S0040100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention pertains to a sophisticated dust detection method for solar panel hybrid assembly operations to increase energy generation efficiency. Dust buildup on solar panels causes an important decrease in power output and system throughput. The invention suggests a new hybrid model combining a brain-inspired neural network structure with a Support Vector Machine (SVM) classifier to efficiently detect footprint dust. The model uses VGG16 for recognizing and classifying dust categories on solar panel images. Then the images are divided into clean and dusty regions with the use of SVM for accurate classification. The approach has been experimented with different sets of solar panel images, with the accuracy shown being the best and up to 75.94%. The hybrid model outperforms traditional methods by providing more accurate detection, better device policy, and interactive tracking of dust deposition. The invention contributes to optimizing solar energy production, promoting sustainability, and ensuring improved operational efficiency of solar panel systems.

No. of Pages : 28 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033343 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVELOPMENT OF PHYTOSOMAL FORMULATION OF BRYONIA LACINOSA LINN,EXTRACT AGAINST ALCOHOL INDUCED LIVER

(51) International classification	:A61P0001160000, A23L0033105000, G01N0021350000, A61K0036420000, A61P0029000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

Alcohol-induced liver cirrhosis is a chronic, progressive condition characterized by oxidative stress, inflammation, and extensive hepatic fibrosis, leading to impaired liver function and increased morbidity. Despite available therapeutic interventions, effective management of cirrhosis remains challenging. This study evaluates the hepatoprotective potential of Bryonia lacinosa Linn. (BL) and its phytosome formulation in an alcohol-induced liver cirrhosis model in Wistar rats. The phytosome formulation was developed using modified solvent evaporation and thin-film hydration techniques, ensuring enhanced bioavailability with a particle size of 177.8 nm and a zeta potential of -29.63 mV, indicating high colloidal stability. Transmission Electron Microscopy (TEM) analysis confirmed the formation of spherical, nano-sized vesicles with smooth surfaces, ranging from 100 to 200 nm, ensuring enhanced bioavailability and cellular uptake. Fourier Transform Infrared Spectroscopy (FT1R) analysis revealed characteristic functional groups, including hydroxyl (O-H), carbonyl (C=O), and aromatic (C=C) bonds, indicating successful complexation and stability within the phytosome structure.

No. of Pages : 24 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033401 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A DECENTRALIZED BLOCKCHAIN-BASED SYSTEM FOR SECURE AND TRANSPARENT BANK LOAN MANAGEMENT AND A METHOD THEREOF

(51) International classification	:G06Q0040030000, H04L0009000000, G06F0021620000, H04L0009320000, H04L0009400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT A DECENTRALIZED BLOCKCHAIN-BASED SYSTEM FOR SECURE AND TRANSPARENT BANK LOAN MANAGEMENT AND A METHOD THEREOF The present disclosure provides a decentralized blockchain-based system (100) and a method (300) for secure and transparent bank loan management. The system (100) includes a Borrower Management Module (102) to receive a loan request from a borrower (104) through a user interface (106), a Verifier Management Module (112) receives borrower credentials and collateral details from the decentralized storage sub-system (108), an Admin Governance Module (118) monitors and manage role-based access to system functionalities using a Role-Based Access Control mechanism (120), a Smart Contract Infrastructure (114) executes predefined loan management rules, including loan approval, repayment tracking, and status updates, the decentralized storage sub-system (108) integrated within an InterPlanetary File System layer (126) generates a content identifier (128) for each stored document and link the CID (128) with corresponding loan records stored in the blockchain (116), a user dashboard interface (106) configured to display borrower-specific loan status, repayment history, and collateral verification results in real time.

No. of Pages : 35 No. of Claims : 11

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033408 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND A METHOD OF ANALYZING THE METAL NANOPARTICLE IN A DROPLET MICROFLUIDIC DEVICE

(51) International classification :B01L0003000000, B01L0007000000, C12M0003060000, G01N0021650000, G01N0015100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT TITLE: A SYSTEM AND A METHOD OF ANALYZING THE METAL NANOPARTICLE IN A DROPLET MICROFLUIDIC DEVICE The present invention discloses a system (100) and a method (300) for real-time analysis of metal nanoparticles. The system (100) comprises a microfluidic chip (116) with a channel (200) for fluid sample formation. The microfluidic chip (116) comprises multiple inlets (202, 204, 208) connected with a channel (200) to supply the feed including plasmonic material, chemicals for the synthesis of plasmonic materials and silicon oil for the fluid sample generation. A T-junction (206) facilitates the mixing of the feed from the multiple inlets (202, 204, 208) and an objective lens (118) and a rotatable mirror (122) collect and transmit optical signals generated from the fluid flowing in the channel (200). A rotatable mirror (122) enables dynamic switching between camera (120) and spectrometer (130) analysis, enhancing accuracy and efficiency. The system (100) for real-time analysis of metal nanoparticles in the 400–900nm wavelength range for applications in digital polymerase chain reaction (Digital PCR) and single-cell analysis. TO BE PUBLISHED WITH FIGURE 1

No. of Pages : 43 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033424 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM FOR PEDESTRIAN NAVIGATION BASED ON STREETLAMP ILLUMINATION AND A METHOD THEREOF

(51) International classification :G06Q10/20, G01C21/34, G08G1/0968, H04L9/32, G16Y40/10
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system (100) for pedestrian navigation based on streetlamp illumination is provided. A controller unit (120) connected to a plurality of lamps (110) captures an operational status of the plurality of lamps in real-time. A maintenance management module (160) stores and monitors the operational status of the plurality of lamps to identify potential failures and malfunctions and facilitate maintenance approvals by an authority by connecting stakeholders. A route optimization module (170) allows a pedestrian to input a current location and a destination location. The route optimization module retrieves one or more routes between the current location and the destination location, computes a safety score, and determines a shortest path. A display module (180) allows the pedestrian to view the one or more routes along with the safety score, best route. A communication module (190) enables an owner of the streets to transmit information of an unsafe route to the authority. FIG. 1

No. of Pages : 35 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033427 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Smart Drug Recommendation System Leveraging Machine Learning and Patient Sentiment Analysis

(51) International classification	:G16H0010600000, G16H0050200000, G16H0020100000, G16H0050700000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
. Abstract A combination of real-world feedback, individual patient profiles, and sophisticated algorithms is needed to optimize therapy suggestions in the increasingly complicated field of personalized medicine. This idea proposes a medicine recommendation system powered by artificial intelligence that provides highly personalized therapy suggestions by combining sentiment analysis with machine learning techniques. medication histories, patient demographics, medical conditions, and electronic health records (EHRs) are all factors that the system considers when making medication recommendations. Sentiment analysis grounded on natural language processing (NLP) can assist identify possible side effects and improve pharmaceutical recommendations by means of study of patient experiences from reviews, comments, and social media. The system learns and adjusts constantly depending on fresh patient data, hence this solution is dynamic and always evolving. By turning current drug prescription approach into an AI-powered personalized healthcare system, the recommended innovation enhances treatment accuracy, side effect mitigation, and patient adherence.

No. of Pages : 12 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033467 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR ELIMINATING SUPPRESSION OF POLYDIMETHYLSILOXANE CURING ON 3D PRINTED MOLDS

(51) International classification :G03F0007000000, B33Y0080000000, B33Y0070000000, B82Y0040000000, B33Y0010000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present disclosure provides a rapid, efficient, and resin-independent process for overcoming curing inhibition of a polymeric material. The present disclosure also provides a method of preparing 3D-printed molds to facilitate seamless PDMS curing and replication in microfluidic and biomedical device fabrication. Traditional resin-based 3D-printed molds suffer from PDMS curing inhibition due to the leaching of uncured monomers, oligomers, and photoinitiators, disrupting polymer cross-linking. Existing post-treatment methods, such as prolonged UV exposure, thermal treatment, and chemical surface modifications, are time-consuming, impractical, and may cause mold deformation. This invention introduces an optimized solvent-based treatment using ultrasonication and vacuum desiccation in isopropyl alcohol (IPA), effectively removing inhibitory contaminants within hours without affecting mold dimensions. The method is applicable to various photopolymer resins, ensuring high-fidelity PDMS replication while eliminating the need for complex chemical modifications. By offering a scalable, cost-effective, and rapid prototyping solution, this innovation enhances 3D printing applications in microfluidics, soft lithography, and biomedical research.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033468 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR CLASSIFYING NON-IID DATASETS IN FEDERATED LEARNING

(51) International classification :G06N 20/00, G06N 3/045, G06N 20/20

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A method for classification of non-IID datasets in Federated Learning is disclosed. The method (100) includes receiving (102) local data at plurality of client devices (202-1…n) for local training models, each of the client devices include local training model, generating (104) signature vector for each of the client devices by the local training models and providing (106) the signature vectors for the plurality of client devices to a server device for storing the signature vectors.. The method further includes aggregating (108) the local training models' parameters received from each of the client devices to generate a global model, receiving (110) a dataset at the server device for the global model, generating (112) a response vector for the dataset provided to the server device, comparing (114) the response vector with the aggregated signature vectors and assigning (116) the closest matching signature vector as classification for the dataset.

No. of Pages : 24 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/04/2025

(21) Application No.202541033481 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Robotics in Construction: Bridging Mechanical and Civil Engineering with Artificial Intelligence & Machine Learning

(51) International classification :B25J0009160000, G06Q0010063100, G06Q0010100000, G06Q0050080000, G06F0030200000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The integration of robotics in construction is revolutionizing the industry by bridging the gap between mechanical and civil engineering through the application of Artificial Intelligence (AI) and Machine Learning (ML). As construction projects become increasingly complex and demands for efficiency and precision rise, robotics has emerged as a critical tool in transforming traditional construction methods. This paper explores the role of robotics in construction, focusing on how these technologies enable seamless coordination between mechanical systems and civil engineering practices, ultimately enhancing productivity, safety, and quality in construction projects. By leveraging AI and ML algorithms, robots can autonomously perform tasks such as bricklaying, welding, surveying, and material handling with remarkable accuracy and speed. The application of these technologies not only improves the precision of structural components but also reduces the risks associated with human labor in hazardous environments. AI-driven robots can adapt to changing construction site conditions, learn from past experiences, and optimize their performance over time, offering solutions that were previously unachievable through traditional methods. Furthermore, robotics in construction fosters collaboration between various engineering disciplines. Mechanical engineers focus on designing and developing robotic systems, while civil engineers provide expertise on how these robots can be integrated into the construction process. Together, they work to create systems that can address both the physical demands of construction and the complex requirements of structural integrity and safety. This paper also discusses the challenges and opportunities associated with the adoption of robotics in construction, such as the need for specialized skills, regulatory concerns, and the high upfront costs of robotic systems. The study concludes that, despite these challenges, the continued development and integration of robotics, AI, and ML in construction will undoubtedly shape the future of the industry, fostering greater efficiency, safety, and innovation.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/04/2025
(21) Application No.202541033489 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : DESIGNING NOISE-RESILIENT CHARGING SYSTEMS FOR ELECTRIC VEHICLES USING RLC CIRCUITS

(51) International classification :G06F17/10, B60L53/00, H02J3/00
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention focuses on stabilizing voltage fluctuations in RLC circuits impacted by stochastic noise, specifically for electric vehicle (EV) charging systems. This innovation employs key methodologies, including stochastic modeling to predict and control voltage variations. By applying Lyapunov-based stochastic stability criteria within the RLC circuit framework, this invention mitigates the adverse effects of grid power fluctuations that can lead to improper charging and reduced battery lifespan. This structured approach enables effective monitoring and maintenance of voltage stability during charging, ensuring that fluctuations remain within safe limits even in noisy environments. Consequently, the model establishes a maximum allowable voltage threshold, promoting stable and efficient battery charging and enhancing battery longevity.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :05/04/2025
(21) Application No.202541033555 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Powered Unified-Retail Hub for Hyper-Local, Personalized Shopping

(51) International classification :G06Q0030025100, G06Q0030060100, G06N0020000000, E04F0015200000, G06N0020200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
India's $1.3 trillion retail sector, powered by millions of kirana stores, remains fragmented and inefficient. Consumers grapple with disconnected invoices (paper, SMS, e-commerce), irrelevant promotions, and long queues, while small retailers struggle to compete with organized retail and e-commerce giants. This project introduces an AI-driven Unified Retail Hub, a first-of-its-kind platform bridging offline and online shopping experiences. The solution leverages OCR (Google Vision/Tesseract) to digitize paper/SMS receipts and geospatial AI to deliver hyper-local promotions (e.g., "Chennai's top curd brands"). Its flagship feature, queue-free OTP pickups, allows urban commuters to pre-order groceries, schedule pickups (e.g., post-work hours), and collect orders instantly via time-bound OTPs, saving 30+ minutes weekly. Partner kiranas offer free delivery within 3 or more km, enhancing user convenience while boosting retailer footfall and revenue. Retailers gain AI-powered inventory tools to reduce stockouts and waste by 25%. Unlike Blinkit (paid quick commerce) or Paytm (generic offers), the platform unifies invoices, prioritizes privacy (GDPR-like controls), and empowers kiranas with actionable insights. Built on scalable cloud infrastructure (Firebase, Google Cloud), it integrates NLP (Gemini API for sentiment analysis) and federated learning to ensure data security.

No. of Pages : 10 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202541033568 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Intelligent Mobile Cloud Healthcare System Using Fuzzy Rule-Based Neural Network Classification

(51) International classification	:G16H0050200000, A61B0005000000, G16H0010600000, G16H0040670000, G16H0050300000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
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(57) Abstract :

The invention presents a Mobile Cloud Healthcare System (MCHS) integrated with Fuzzy Rules-Based Neural Networks (FRBNN) for intelligent medical data classification and real-time patient monitoring. This hybrid AI approach combines fuzzy logic, which efficiently handles uncertainty in medical data, with neural networks, which adaptively learn patterns to enhance diagnostic accuracy. The system leverages cloud computing for scalable and secure storage, ensuring remote accessibility for healthcare providers and patients. It also integrates wearable and IoT-enabled devices to continuously collect and analyze patient health data, enabling automated disease prediction, risk assessment, and personalized treatment recommendations. By reducing diagnosis time and improving healthcare efficiency, this AI-driven system enhances telemedicine services and expands healthcare accessibility, particularly benefiting remote and underserved populations.

No. of Pages : 8 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :05/04/2025

(21) Application No.202541033594 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-POWERED SYSTEM AND METHOD FOR EARLY DETECTION AND CLASSIFICATION OF BRAIN TUMORS USING MEDICAL IMAGING

(51) International classification	:G16H0050200000, G16H0030200000, G06T0007000000, G06T0007110000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

[033] The present invention relates to an AI-powered system for early detection and classification of brain tumors using medical imaging, specifically MRI and CT scans. The system leverages deep learning algorithms for automated tumor segmentation, classification, and diagnosis, improving accuracy and efficiency in medical imaging analysis. It comprises a data acquisition module, an image pre-processing unit, an AI-based segmentation module, a classification module using convolutional neural networks (CNNs) and transformer-based architectures, a decision support system integrating clinical parameters, and a user interface for result visualization. The system generates detailed diagnostic reports, including tumor type, size, location, and confidence scores, assisting radiologists and neurologists in making informed clinical decisions. Additionally, it incorporates continuous learning mechanisms to enhance performance over time and seamlessly integrates with hospital information systems (HIS) and picture archiving and communication systems (PACS). This invention significantly advances AI-driven precision medicine, facilitating early tumor detection and improving patient outcomes. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :06/04/2025

(21) Application No.202541033610 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : FINANCIAL CAPABILITY INDEX SYSTEM FOR WOMEN IN COMMUNITY-BASED ORGANIZATIONS

(51) International classification	:G06Q0050200000, G06Q0040000000, G06Q0030060100, G06Q0040060000, G06Q0040020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a system for assessing and enhancing the financial capability of women in Community-Based Organizations (CBOs). The system evaluates financial competence through a structured methodology that considers financial knowledge, skills, attitudes, and behaviors. It employs Principal Component Analysis (PCA) to derive a Financial Capability Index (FCI), which categorizes women into different financial capability levels. Based on this classification, targeted financial education programs are delivered to improve financial decision-making skills. The system incorporates a digital platform for online assessments, personalized training, and financial progress tracking. A feedback mechanism facilitates periodic reassessments, enabling continuous financial improvement. The invention leverages peer learning within CBOs and adapts financial education content to socio-cultural contexts, ensuring practical applicability. By providing structured assessment, tailored education, and continuous monitoring, the invention empowers women to make informed financial decisions, promoting financial inclusion and economic empowerment.

No. of Pages : 17 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033618 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR AUTOMATED CHEMICAL DETECTION AND CLEANUP

(51) International classification :B25J0009160000, G05D0001000000, G01N0033000000, B01D0053860000, G01N0001020000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[034] The present invention relates to an autonomous robotic system, the Chemical Cleaning and Detecting Bot, designed for detecting and cleaning chemical contaminants on various surfaces in high-risk environments such as hospitals, laboratories, and food-processing facilities. The system combines advanced chemical detection sensors, adaptive cleaning technology, and AI-powered navigation to autonomously identify hazardous substances and execute targeted cleaning protocols. By minimizing human exposure to toxic chemicals and optimizing the use of cleaning agents, the bot ensures precise, eco-friendly decontamination while enhancing operational efficiency. Integrated with IoT for real-time reporting and compliance tracking, this system offers a sustainable, safe, and effective solution for maintaining high cleanliness and safety standards. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 19 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033624 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR LANDSLIDE DETECTION AND EARLY WARNING

(51) International classification :G08B0021100000, G06Q0050260000, G08B0031000000, G01W0001140000, G06Q0010063500
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[029] The present invention relates to a system and method for landslide detection and early warning using a network of environmental and geological sensors to monitor critical parameters such as soil moisture, ground vibration, rainfall intensity, and slope stability. The system employs machine learning algorithms to analyze real-time and historical data, enabling accurate prediction of landslide events. An IoT-based wireless communication network facilitates seamless data transmission to a central processing unit, which processes and evaluates terrain stability. The system generates automated multi-channel alerts through SMS, email, mobile applications, and sirens to notify authorities and at-risk communities. The integration of cloud-based storage, AI-driven analytics, and solar-powered sensors ensures continuous operation, remote accessibility, and enhanced predictive capabilities. This invention provides a scalable, adaptive, and cost-effective solution for disaster risk mitigation, improving landslide monitoring and public safety. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033625 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR HARNESSING AIRFLOW ENERGY IN VEHICLES

(51) International classification :F03D0009110000, F03D0009320000, F03D0013200000, F03D0009250000, B60W0010080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
[034] The present invention relates to an innovative airflow energy harvesting system for electric vehicles, wherein a wind turbine mounted on the vehicle's roof captures kinetic energy from the airflow generated during motion. This energy is converted into mechanical power and subsequently transformed into electrical energy using a DC motor. The generated electricity can be used to support the vehicle's electrical systems or be stored in the battery, thereby reducing reliance on external charging infrastructure and enhancing energy efficiency. Designed with aerodynamic and lightweight materials, the system minimizes drag and integrates seamlessly with existing vehicle architecture. By utilizing renewable wind energy, the invention addresses key challenges such as range anxiety and contributes to a more sustainable and efficient mode of transportation. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :06/04/2025

(21) Application No.202541033627 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ADVANCED HIGH-EFFICIENCY MULTI-MODE ELECTRICAL CONVERTER SYSTEM

(51) International classification :H02M3/156, H02M3/157, H02M3/158, H02M1/00, G05B11/42

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention discloses an advanced multi-mode electrical converter system designed to operate efficiently across variable electrical conditions. It comprises a dynamic topology capable of functioning in buck, boost, and buck-boost configurations, regulated by a digital control unit based on real-time voltage and current monitoring. The system includes a high-precision sensor network, ADC interface, and intelligent controller equipped with an adaptive mode-selection algorithm and PID-based output voltage regulation. It further integrates soft-switching strategies to enhance power conversion efficiency and reduce electromagnetic interference. Communication modules facilitate interaction with IoT and SCADA platforms through wired and wireless protocols. The system is equipped with multiple safety features including over-voltage, over-current, and thermal protection. This invention ensures intelligent, efficient, and adaptable power delivery suitable for modern energy systems.

No. of Pages : 15 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033629 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN PREDICTIVE DIAGNOSTICS AND PREVENTIVE MAINTENANCE SYSTEM FOR SEMICONDUCTOR FABRICATION FACILITIES

(51) International classification	:G06N0020000000, G06N0005040000, G06F0011070000, G06N0007010000, G06Q0010200000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
AI-DRIVEN PREDICTIVE DIAGNOSTICS AND PREVENTIVE MAINTENANCE SYSTEM FOR SEMICONDUCTOR FABRICATION FACILITIES An AI-driven predictive diagnostics and preventive maintenance system for semiconductor fabrication facilities is disclosed. The system integrates sensor data, operational logs, and machine learning algorithms to detect anomalies, predict equipment failures, and recommend optimized maintenance schedules. It enhances customer support through real-time diagnostics and proactive engagement. The system improves operational efficiency, reduces downtime, and supports data-driven decision-making in the semiconductor industry.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033639 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-ENABLED RISK ASSESSMENT AND ADAPTIVE COVERAGE SYSTEM FOR HOME OWNERS, CONDO, RENTERS AND HOME APPLIANCE INSURANCE

(51) International classification :G06Q0040080000, G06N0020000000, H04L0012280000, G06Q0010200000, G16H0050200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
AI-ENABLED RISK ASSESSMENT AND ADAPTIVE COVERAGE SYSTEM FOR HOME OWNERS, CONDO, RENTERS AND HOME APPLIANCE INSURANCE An AI-enabled system for real-time risk assessment, adaptive insurance coverage management, and intelligent claims processing is disclosed. The system applies machine learning algorithms to evaluate property and lifestyle data from smart devices, environmental sources, and historical records to dynamically generate risk scores and optimize insurance coverage. It also automates claims validation and resolution using IoT data and predictive models. The invention enhances personalization, fraud detection, and operational efficiency in homeowners, condo, renters, and home appliance insurance.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :06/04/2025

(21) Application No.202541033641 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR INTEGRATING COMMUNITY NETWORKS WITH SUSTAINABLE DEVELOPMENT GOALS

(51) International classification	:G06Q0020380000, G06Q0010063900, G06Q0040000000, G06Q0010101000, G06Q0040060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The present invention provides a digital integration system for promoting women's economic empowerment by leveraging financial inclusion, skill development, market access, and governance frameworks. The system utilizes an AI-powered digital platform that enables women to access financial resources, secure micro-loans, participate in vocational training programs, and connect with digital marketplaces. A blockchain-based financial mechanism ensures transparent and secure transactions, while AI-driven analytics assess creditworthiness and recommend customized growth pathways. The system incorporates an interactive learning module, offering tailored training programs in business management, digital literacy, and industry-specific skills. Through integrated e-commerce channels, the system connects women entrepreneurs with buyers, investors, and distributors, facilitating scalable business growth. A decentralized governance model ensures policy compliance, workplace protection, and equal financial opportunities. The invention fosters socio-economic sustainability by aligning with Sustainable Development Goals (SDGs), addressing systemic barriers to women's economic participation, and creating an inclusive and digitally connected ecosystem for long-term financial independence.

No. of Pages : 18 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/04/2025
(21) Application No.202541033650 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Wearable IoT Device with AI-driven Real-time Health Monitoring and Emergency Response System

(51) International classification :A61B0005000000, A61B0005020500, G16H0050300000, A61B0005024000, A61B0005110000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention discloses a wearable Internet of Things (IoT) device integrated with an artificial intelligence (AI)-based system for real-time health monitoring and emergency response. The device collects multi-modal physiological data—including heart rate, ECG, blood oxygen levels, body temperature, and motion—through embedded biosensors. A proprietary Hierarchical Health Event Detection Method (H-HEDM) processes these inputs using AI techniques such as Long Short-Term Memory (LSTM) neural networks, Random Forest classifiers, and Support Vector Machines (SVM) to detect health anomalies and predict emergencies. Upon identifying critical conditions like arrhythmias, hypoxia, or falls, the system autonomously initiates emergency protocols by alerting preconfigured contacts and transmitting real-time health data and geolocation via cellular or wireless communication. The device operates with a companion mobile application for visualization and configuration. This invention enhances personal health security by enabling proactive intervention, especially in cases where users are incapacitated or unable to respond manually.

No. of Pages : 8 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033795 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DEVELOPMENT AND CHARACTERIZATION OF ALUMINIUM METAL MATRIX HYBRID COMPOSITE

(51) International classification :C22C0001100000, C22C0049060000, B22D0019140000, C22C0021000000, C22C0032000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Stir casting is one of the most commonly used and cost-effective methods for producing aluminum metal matrix composites (AMMCs). In this process, the aluminum matrix is mixed with solid or particulate reinforcements to form a composite material that exhibits enhanced mechanical and tribological properties. The stir casting technique is particularly suitable for incorporating various reinforcement materials, such as The AI 7075 zirconium and silicon Nitride into the aluminum matrix.

No. of Pages : 7 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033814 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FUZZY LOGIC CONTROLLER FOR NON LINEAR DYNAMIC SYSTEMS

(51) International classification :G05B0013020000, G06N0003006000, G05B0013040000, G06N0005048000, B60W0050000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract- Nonlinear dynamic systems have complex behaviors that pose a problem to traditional control strategies as a result of uncertainties, parameter changes, and strong nonlinearities. This paper introduces an optimized Fuzzy Logic Controller (FLC) architecture for nonlinear systems, combining adaptive inference mechanisms and intelligent rule adaptation. The designed FLC uses an adaptive fuzzy inference system (AFIS), utilizing selftuning membership functions and rule optimization through metaheuristic algorithms like Genetic Algorithms (GA) and Particle Swarm Optimization (PSO). A hybrid model-free and model-based framework is used to improve robustness, where reinforcement learning optimizes fuzzy rule sets online to achieve optimal control action. Takagi-Sugeno (T-S) fuzzy model is employed to approximate the dynamics of the system to enhance computational efficiency and decision-making accuracy. Online Lyapunov-based stability analysis is also included to ensure system stability under changing conditions. The proposed FLC is tested on highly nonlinear benchmark systems, such as robotic manipulators, chaotic systems, and autonomous vehicles, for its performance. The comparison with conventional PID controllers and neural network controllers reveals better tracking accuracy, disturbance attenuation, and adaptability. Simulation and real-time results confirm the efficacy of the proposed approach in coping with complex nonlinearities with little computational cost.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033822 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ATMOSPHERIC DATA ACQUISITION FROM BALLOON SATELLITE USING LORA MODULE

(51) International classification	:G01W0001080000, G01S0019140000, G01J0003420000, G01N0033000000, G01D0021020000
(86) International Application No Filing Date	:NA :NA
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(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The Atmosphere Data Acquisition System using a Balloon Satellite and LoRa Module is an innovative approach to collecting real-time atmospheric data for scientific research and environmental monitoring. This system integrates advanced sensor technology, long-range communication, and data processing algorithms to gather essential atmospheric parameters such as temperature, humidity, pressure, and gas composition at various altitudes. The system is designed to be deployed on a high-altitude balloon, which ascends to the stratosphere, capturing and transmitting real-time data through the LoRa (Long Range) communication module. LoRa technology ensures efficient, low-power, ami long-distance data transmission, making it ideal for remote sensing applications.

No. of Pages : 9 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033827 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : NEXT-GEN ADVANCED LIFE JACKET WITH LONG-RANGE TECHNOLOGY

(51) International classification :A63B0029020000, G08B0025100000, A63B0027040000, G08B0021020000, G08G0001160000
(86) International Application No :NA
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(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT NEXT -GEN ADVANCED LIFE JACKET WITH LONGRANGE TECHNOLOGY Mountain climbers frequently encounter harsh weather conditions, particularly in freezing temperatures, which can result in hypothermia-a critical condition that arises when the body loses heat more rapidly than it can generate it. When body temperature falls below 35°C, climbers may suffer from confusion, exhaustion, and ultimately unconsciousness. To avert this, we have developed a cutting-edge life jacket that continually tracks the climber's healih and offers essential interventions to sustain body temperature. This life jacket comes equipped with a temperature sensor, Peltier module, and pulse sensor for real-time health tracking. The temperature sensor monitors the climber's body temperature, and if it falls dangerously low, the Peltier module activates to deliver the necessary heating or cooling. A pulse sensor tracks the climber's heart rate consistently, ensuring that vital signs remain stable. To improve navigation and safety, the system incorporates a GPS module, assisting climbers in selecting the safest routes and monitoring their real-time location. The health and location data gathered are communicated to the rescue team or caregivers for prompt intervention. This guarantees that if a climber suffers from severe hypothermia or any other health complication, help can be dispatched swiftly.For robust and long-range communication, we· utilize the LoRa (Long Range) network, which ensures dependable connectivity even in remote mour.·~,,!nous regions. In the event of emergencies, the system can send alert notifications through an Android app, ensuring that climbers can obtain immediate assistance. The employment of LoRa technology guarantees low energy consumption, allowing the device to operate effectively for prolonged periods without the need for frequent battery changes. By providing ongoing health monitoring, real-time data transmission, and intelligent intervention, this system greatly improves the safety of climbers. It reduces the chances of hypothermia-related fatalities and aids mountaineers in making wellinformed decisions during their expeditions. This life jacket represents a significant advancement in adventure safety technology, making mountain climbing more secure and safer.

No. of Pages : 12 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033828 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTIFUNCTIONAL IOT ROBOT FOR MILITARY APPLICATIONS

(51) International classification :H04L0009400000, B25J0009160000, F41H0007000000, F41H0007020000, H04W0004700000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT MULTIFUNCTIONAL lOT ROBOT FOR MILITARY APPLICATION ln i11odem military operations, autonomous robotic systems are essential for mission sm.:cess and minimizing human casualties. This project focuses on the development of a Multifunctional loT Robot for Military Applications, designed to enhance surveillance, hazard detection, and combat support. The system integrates advanced sensors, AI, and realtime loT -based data transmission to improve situational awareness and strategic decisionmaking. Equipped with loT capabilities, the robot continuously collects battlefield data and transmits it to a central command for remote monitoring and tactical planning. Its sensor suite facilitates obstacle detection, environmental analysis, and threat identification, ensuring adaptability to diverse terrains. Additionally, its autonomous navigation capabilities assist in landmine detection, reconnaissance, and hazard avoidance, significantly reducing risks for military personnel. The integration of Al-driven automation enhances the robot's ability to process and interpret real-time data, enabling rapid responses to dynamic combat scenarios. Secure loT c~mm1Unication_ ensures. scamlcss_sharing of _critiC~ I intclligc_!lc~, i11_1p_r~i_~g _c~or_9~1)~!_i__o~ ~n_ military missions. The robot's adaptability, efficiency, and cost-effectiveness make it a valuable asset in modem defense strategies, offering an innovative approach to military robotics and smart warfare solutions. Furthermore, the system is built to function under extreme battlefield conditions, ensuring reliability and robustness. The robot can execute pre-programmed missions autonomously whil~ allowing manual override for enhanced flexibility. Its modular architecture supports easy upgrades, enabling future advancements in military robotics. Enhanced battery efficiency extends operational duration, reducing reliance on frequent recharging. The continuous evolution of AI and ·JoT technologies will further str.c• gthcn military robots, making them indispensable in modem defense systems. The system's' ability to provide real-time data analyiics facilitates predictive threat assessment, reducing response time in .critical situations. With a lightweight and compact design, the robot ensures high mobility and rapid deployment in dynamic environments. Albased pattern recognition enhances the robot's ability to identify potential threats, increasing operational accuracy. The robot can also integrate with drones and other Sl!rveillance · equipment, expanding its range and effectiveness. Advanced encryption techniques secure data transmission. preventing cyber threats and unauthorized access. Machine learning algorithms allow continuous self-improvement, optimizing performance over time. By reducing human exposure to high-risk areas, the system enhances soldier safety while maintaining tactical superiority.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033829 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RFID BASED SMART CAR PARKING SYSTEM

(51) International classification :G06Q0020320000, G08G0001140000, G06Q0050400000, H04L0067120000, G16H0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT RFID BASED SMART CAR PARKING SYSTEM This product presents an RFlD-Based Paid Car Parking System utilizing the Arduino UNO microcoritroller to automate vehicle access and payment processing. The system integrates RFlD technology, an IR sen·sor, a servo motor, and a 12V AC to DC transformer to ensure secure and efficient parking operations. Each registered vehicle is assign·ed an RFlD tag, which is detected by the RFlD reader upon arrival. If authenticated, the servo motor opens the parking gate, allowing entry. An IR sensor monitors vehicle presence, ensuring· smooth operation. • Real-time information such as access status and payment details is displayed on a 16x2 LCD screen, while a buzzer provides audio alerts for successful or denied access. This automated system eliminates manual ticketing; reduces unauthorized entry, and improves user convenience by streamlining parking operations. • By leveraging JoT technology, the system can transmit real-time data to a cloud-based server or a centralized monitoring system, enabling remote tracking of parking space availability, vehicle logs, and payment records. The integration ofloT allows for smart data analytics, predictive maintenance, and mobile app connectivity for users to check parking space availability and receive notifications. This enhances overall security, effieieuey, allll SlOalaLilily. Keywords: RFID, Paid Car Parking System, Arduino UNO, loT, RFID Technology, IR Sensor, Servo Motor, Smart Parking, Cloud-Based Parking System, Vehicle Access Control, Automated Ticketing, Centralized Monitoring, Smart City Infrastructure, Contactless Payment, Real-Time Management.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033830 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : FISHERMAN BORDER IDENTIFICATION SYSTEM USING GPS

(51) International classification :G08B0021020000, A01K0097060000, H04W0004020000, G01S0019140000, A01K0097000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT FISHERMAN BORDER IDENTIFICATION SYSTEM USING GPS Fisherman Border Identification System Using GPS Abstract: The Fisherman Border Identification ·system using GPS is an innovative solution designed to enhance the safety of fishermen by providing real-time location tracking and border alerts. This system integrates GPS technology, wireless communication, and data processing algorithms to help fishermen navigate safely and avoid crossing international maritime boundaries. System Ovcrvic,~: The system utilizes GPS modules to continuously track the boat's location and alert the fishermen when' they approach or cross predefined maritime boundaries. Wireless communication technologies like LoRa ensure reliable and long-range data transmission to a central monitoring station. The system is designed for easy deployment on fishing boats, ensuring minimal interference with fishing activities while maximizing safety.

No. of Pages : 9 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033831 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : WOMEN SAFETY NIGHT PATROLLING IOT ROBOT

(51) International classification :G16H0020100000, A61J0007040000, A61J0007000000, G16H0040670000, G16H0020130000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT loT Based Portable Medicine Box The loT-Based Portable Medicine Box is an innovative healthcare solution aimed at improving .medication adherence, reducing human errors, and enhancing overall· patient. safety. Many individuals, especially elderly patients and those with chronic conditions, struggle to maintain proper medication schedules, leading to missed doses, incorrect intake, or dependency on caregivers for reminders. Traditional medication management methods, such as manual tracking and written schedules, are often unreliable and prone to errors. This smart medicine box is designed to address these challenges by incorporating modem technologies that automate and simplify medication management. The system integrates loT technology, an AI-powered chatbot, and RFID tracking to provide real-time monitoring, automated reminders, .and enhanced security. The medicine box is designed with multiple compartments, each. designated for different medications, ensuring .• proper organization. Users or caregivers can configure customized medication schedules using a mobile application, which syncs with the loT system to send real-time alerts and notifications. If a user misses a scheduled dose, an immediate notification is sent to both the user and their designated caregivers, ensuring timely intervention. The integration of RFID technology enhances security by tracking and logging every interaction with the medicine box. This allows caregivers or medical professionals to monitor when and how often the medication box is accessed, improving accountability. One of the standout features of this system is its AI chatbot, which offers personalized health advice and real-time medication guidance. The chatbot can answer user queries, provide reminders, and assist with medication-related concerns, improving user engagement and overall compliance. The system is also equipped with tamper detection sensors, which trigger alerts in case of unauthorized access, thereby ensuring medication safety and security. Realtime data synchronization with cloud storage allows caregivers and healthcare providers to monitor medication adherence remotely, making it easier to track patient progress and make necessary adjustments to their treatment plans.

No. of Pages : 9 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202541033832 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AGROGUARDIAN: SMART SOLUTIONS FOR SUSTAINABLE FARMING AND FRUIT DISEASE DIAGNOSIS

(51) International classification :H04L0009400000, G06N0020000000, G06F0021560000, G06F0021550000, G06F0021570000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT The advent of artificial intelligence (Al) techniques has revolutionized network security by enabling predictive modelling for threat detection. This abstract proposes a novel approach to enhancing network security through predictive modelling, leveraging advanced Al techniques. By analysing vast amounts of network traffic data, Al algorithms can identify patterns indicative of potential threats, including malware, intrusions, and anomalous activities.The predictive models developed through this approach can forecast potential network vulnerabilities and pre-emptively detect emerging threats before they manifest into security breaches. This proactive stance empowers organizations to fortify their network defences, minimize the risk of cyberattacks, and safeguard sensitive information. Through the fusion of Al and predictive modelling, this research endeavours to pave the way for more robust and resilient network security frameworks in an increasingly interconnected digital landscape

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033833 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI DRIVEN PREDICTIVE MODEL FOR NETWORK THREAT DETECTION

(51) International classification :H04L0009400000, G06N0020000000, H04L0041140000, G06N0003080000, H04N0007180000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The advent of artificial intelligence (Al) techniques has revolutionized network security by enabling predictive modelling for threat detection. This abstract proposes a novel approach to enhancing network security through predictive modelling, leveraging advanced Al techniques. By analysing vast amounts of network traffic data, Al algorithms can identify patterns indicative of potential threats, including malware, intrusions, and anomalous activities.The predictive models developed through this approach can forecast potential network vulnerabilities and pre-emptively detect emerging threats before they manifest into security breaches. This proactive stance empowers organizations to fortify their network defences, minimize the risk of cyberattacks, and safeguard sensitive information. Through the fusion of Al and predictive modelling, this research endeavours to pave the way for more robust and resilient network security frameworks in an increasingly interconnected digital landscape Keywords: Predictive modelling, Network security, Artificial intelligence, Threat detection, Cybersecurity, Machine learning, Anomaly detection, Predictive analytics, Network traffic analysis, Cyber threats.

No. of Pages : 9 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033834 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SECURE AND GAMIFIED ONLINE PLATFORM FOR CLOUD GAMING WITH OPTIMISED ENCRYPTION

(51) International classification :A63F0013355000, H04L0009060000, H04L0009400000, A63F0013352000, G06F0009500000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(57) Abstract :
ABSTRACT This product focuses on enhancing video transmission efficiency in cloud gaming systems during low-traffic periods. A novel algorithm reduces speculative video patterns, minimizing redundant frame transmissions to optimize bandwidth usage. MATLAB simulations analyze traffic scenarios to validate the proposed technique’s effectiveness.To ensure data security, RC7 and AES encryption algorithms are implemented, safeguarding video streams during transmission .The system uses AWS for hosting game servers and MongoDB for managing metadata, encryption keys, and logs. Real-time analysis ensures seamless gameplay with minimal latency and secure data handling. This scalable approach balances resource utilization, user experience, and security, offering an efficient solution for cloud gaming in low-traffic scenarios.

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025

(21) Application No.202541033842 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART HELMET

(51) International classification :A61B0005000000, A61B0005020500, A61B0005024000, A61B0005010000, G16H0050300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT SMART HELMET The Smart Health Monitoring Wearable is an advanced device designed to provide continuous health tracking and empower users to manage their well-being more effectively. This wearable integrates a range of sensors to monitor key health parameters in real-time. The LM35 temperature sensor accurately measures body temperature, which is essential for detecting fever or other health issues early. The heart rate sensor, such as the MAX30 l 00, tracks heart rate and blood oxygen levels, enabling users to monitor their cardiovascular health and detect potential irregularities. Additionally; the wearable features a Galvanic Skin Response (GSR) sensor, which measures skin conductivity to assess emotional stress, anxiety, or arousal levels, providing insights into mental health. It also includes a blood pressure sensor, like the MPX50 I 0, that measures both systolic and diastolic pressure, helping users to detect early signs of hypertension and other cardiovascular conditions. All data collected by these sensors is transmitted via loT connectivity to a cloud-based platform. This enables proactive management of health conditions and timely interventions when necessary. By offering real-time monitoring of vital signs; this wearable empowers individuals to take care of their health. It· serves as an invaluable tool for early detection of health issues, promoting wellness, and ensuring a more informed approach to health . management. Whether used for general well-being or specific health concerns, the Smart Health Monitoring Wearable qffers a comprehensive soiution for individuals committed to improve and maintaining their health.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033851 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GAMIFIED EMOTION RECOGNITION AND MUSIC THERAPY FOR CHILDREN WITH AUTISM USING YOLO

(51) International classification :G09B0019000000, G06V0040160000, G10L0025630000, G16H0020700000, A61B0005160000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
GAMIFIED EMOTION RECOGNITION AND MUSIC THERAPY FOR CHILDREN WITH AUTISM USING YOLO ABSTRACT : Children with Autism Spectrum Disorder (ASD) frequently war with emotional recognition, self-regulation, and social interactions, impacting their common improvement. This observe proposes an progressive play-based mental fitness intervention that integrates gamification, real-time face emotion reputation the usage of the YOLO (You Only Look Once) algorithm, and customized auditory comments to enhance emotional intelligence in youngsters with ASD. YOLO appropriately detects and classifies facial expressions inclusive of happiness, unhappiness, anger, and marvel in real time. Upon detecting an emotion, the machine dynamically selects and plays suitable audio songs to alter mood, enhance high-quality behaviors, and encourage emotional expression. Gamified obligations with rewards and innovative trouble stages are integrated to preserve engagement and motivation, ensuring consistent participation. The machine adapts to each baby's character wishes, dynamically adjusting task complexity, remarks, and audio picks based totally on the kid's progress. Through this customized technique, the system creates an enticing learning environment that promotes emotional reputation, self-regulation, and social interplay. Additionally, unique progress monitoring gives caregivers and therapists with treasured insights for customized intervention making plans, optimizing therapeutic results. The intervention's multisensory method, combining gamification and auditory feedback, reinforces emotional learning in a supportive, dynamic surroundings. This AI-powered machine addresses the emotional and social demanding situations confronted by way of children with ASD via mixing modern technology with evidence-primarily based healing strategies, supplying a scalable and adaptable answer for improving emotional well-being.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033853 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-DRIVEN SPEECH TO SIGN LANGUAGE CONVERSION FOR REAL TIME MULTILINGUAL COMMUNICATION

(51) International classification :G10L0015260000, G09B0021000000, G06F0003010000, G06F0003160000, G06V0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT C:5S-. The product aims to develop an Al-powered system that can convert speech to sign language using animated avatars in real time.The system is designed for individuals with hearing and speech impairments, particularly in public and government functions. The system uses machine learning models, including speech-to-text for accurate transcription of spoken words and gesture recognition algorithms to generate sign language.Animated avatars will mimic precise sign language gestures, ensuring accurate and understandable translations for users.The system will be designed to process live audio inputs and translate them immediately, ensuring accessibility during public interactions without delays.This project proposes an Al-powered system for real-time speech-to-sign language translation with animated avatars. Through machine learning algorithms, the system receives live audio inputs, translates them into text, and then converts them into sign language gestures. MATLAB will be used for real-time data processing, model training, and analysis to ensure precise and efficient translation. The animated avatars will execute accurate sign language gestures, promoting accessibility independent of human interpreters. The system proposed here combines speech recognition, text processing, gesture mapping, and real-time rendering to create a seamless user experience. Its scalability makes deployment across different platforms possible, providing inclusivity in public communication. The solution offers an automated and effective way to bridge communication gaps for the hearing-impaired and speech-impaired populations.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033857 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART SHOPPING TROLLEY WITH BILLING SYSTEM

(51) International classification	:G06Q0020200000, G06Q0020320000, H04M0015000000, G06K0007100000, G06Q0020100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
7. ABSTRACT: A smart trolley billing system is an innovative technology designed to streamline the shopping experience by automating the checkout process. The system integrates barcode scanning technology with a smart trolley equipped with sensors and a display unit. As customers place items in the trolley, the system automatically identifies and tallies the products in real time, displaying the total cost on the trolley's screen. This eliminates the need for traditional checkout lines, reducing wait times and enhancing the shopping experience. Additionally, the system can be integrated with mobile payment platforms, allowing for a seamless, contactless paymentprocess. The smart trolley with billing system also eliminates the human effort to push the trolley. The trolley follows the customer to the locations gone by the customer.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033869 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART GUARD INTREGRATED VEHICLE SAFETY AND COLLISION PREVENTION SYSTEM

(51) International classification	:G06V0020580000, B60K0028060000, G08G0001160000, A61B0005110000, B60W0030090000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :
The Automatic Safety Guidance and Advanced Collision with Alcohol Detection System is an innovative solution aimed at enhancing road safety through the integration of real-time monitoring, alcohol detection, and collision avoidance technologies. The system utilizes a combination of sensors, cameras, and advanced image processing algorithms to detect potential collisions and alert drivers in real-time. Furthermore, an alcohol detection mechanism is incorporated to ensure that drivers are fit to operate a vehicle, mitigating risks associated with driving under the influence. This system is designed to be implemented in vehicles as an additional layer of safety, improving overall road safety and reducing zero accidents. The alcohol detection system uses a Breathalyzer or sensor-based technology to measure the alcohol concentration of the driver, triggering an alert or automatic vehicle intervention when unsafe levels are detected. In addition, the collision avoidance feature employs ultrasonic sensors, radar, and cameras to monitor the surrounding environment and detect any potential obstacles or sudden changes in traffic conditions. The system actively assists the driver by providing guidance, activating alerts, or even taking corrective actions (like automatic braking) to avoid a collision. By integrating these advanced technologies, this system aims to reduce the risk of accidents, improve driver behavior, and ultimately save lives. The project not only addresses the increasing number of accidents caused by impaired driving but also ensures that vehicles are equipped with intelligent safety systems that can respond proactively to real-time threats, creating safer roads for everyone. Keywords: Alcohol Detection, Collision Prevention, Traffic Sign Recognition, Lane Detection.

No. of Pages : 11 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033870 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MULTILINGUAL AI DRIVEN WAR CRIMES DOCUMENTATION SYSTEM WITH SECURE METADATA AGGREGATION

(51) International classification :H04L0009400000, G06Q0050180000, G06Q0010100000, G06N0020000000, G06Q0050260000

(86) International Application No :NA
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(87) International Publication No : NA

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(57) Abstract :

Abstract This patent relates to a new method for the documentation of War Crimes using AI (Artificial Intelligence) and Edge Computing to facilitate the creation, analysis and ensure the storage of the most sensitive evidential information. The system consists of a combined set of data intake devices including a multilingual voice translator, text scanner, and high-res camera capable of capturing multiple data modalities. An loT Edge module processes data at a local level and runs an initial AI model on that data, reducing the unnecessary latency and overhead of transporting the data, only propagating metadata back for each data point. This metaJala, which includes timestamps, geolocation data, and device identifiers, constitutes essential context for the evidence obtained, making it more reliable and useful for legal purposes. The true genius comes from the system's ability to securely bring together, and interpret, this complex variety of data. After processing the data, the loT Edge module sends the data and metadata securely to a centralized server, where it undergoes further analysis using advanced AI algorithms that cross-reference information from various sources, identify patterns and generate reports. This analysis on the server side provides concrete insights_into the raw data, allowing for the investigation and prosecution of acts of war. The sensitive data is securely stored using the system which protects its integrity and secrecy against any unauthorized access and manipulation which is crucial to maintain it as a reliable evidence in legal perspective. Investigators and analysts would be equipped with a user-friendly computer-based workstation for accessing processed data and reports. Followed by the use of a data visualization interface to further analysis within the study, empowering users with the ability to showcase their evidence in an effective pitch. This state-of-the-art AI technology combined with security level measures through edge computing provides an extra layer of authentication which enhance the performance of the system and allows thorough documentation and prosecution of war crimes, paving the way for a more efficient approach to justice for international crimes.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033887 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTELLIGENT PLATFORM FOR AUTOMATED ASSISTANCE AND OPTIMIZATION IN ELECTRIC VEHICLES

(51) International classification :H04L0009400000, G06N0020000000, B60W0050000000, H04L0067120000, G05D0001000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
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(57) Abstract :
032] The present invention relates to an Intelligent Platform for Automated Assistance and Optimization in Electric Vehicles (EVs), designed to enhance the performance, safety, and efficiency of electric vehicles through advanced technologies like Artificial Intelligence, Machine Learning, IoT, and Cloud Computing. The platform comprises multiple integrated modules such as real-time multi-sensor data acquisition, predictive maintenance, adaptive driver assistance, dynamic energy management, and cybersecurity. It enables real-time monitoring, automated decision-making, personalized driving assistance, battery optimization, remote diagnostics, and secure cloud connectivity. The invention provides a scalable and future-ready solution adaptable for integration with autonomous driving systems, vehicle-to-vehicle communication, smart grids, and fleet management, thereby transforming conventional EVs into intelligent, connected, and self-learning transportation systems. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033893 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SELF-HEALING LEDGERS: BLOCKCHAIN ACCOUNTS THAT AUTO-CORRECT ERRORS VIA CONSENSUS SWARMS

(51) International classification	:H04L0009000000, H04L0009320000, H04L0009060000, G06F0021640000, G06Q0010100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention introduces Self-Healing Ledgers^ a transformative blockchain framework that autonomously detects and corrects transactional errors through decentralized Consensus Swarms. While traditional distributed ledgers prioritize immutability at the expense of error recovery—relying on contentious hard forks or centralized overrides— this innovation reconciles permanence with adaptability by embedding self-corrective intelligence directly into blockchain architecture At its core, the system integrates: 1. An Anomaly Detection Engine employing adaptive machine learning to identify discrepancies in transactions and smart contract executions; 2. A Consensus Swarm Network of validator nodes that collectively debate and approve corrections using bio-inspired decision-making protocols; and 3. A Self-Healing Execution Module that implements amendments via cryptographically signed "healing blocks," preserving an immutable audit trail of all changes. Key innovations include: • Swarm Intelligence Governance: Error resolutions are achieved through staked, incentive-aligned validator networks rather than centralized arbitration • Context-Aware Corrections: Dynamic risk-weighting algorithms distinguish between intentional transactions and genuine errors • Cryptographic Accountability: All amendments are transparently recorded without compromising chain integrity This framework eliminates the need for manual reversals while preventing adversarial manipulations, making it particularly valuable for DeFi platforms, supply chain ledgers, and institutional blockchain applications where transactional accuracy is paramount. By introducing auto-corrective immutability, the invention advances blockchain technology beyond its current limitations—transforming distributed ledgers from static record-keeping systems into adaptive, self-regulating infrastructures..

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033894 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : MARITIME BOUNDARY DISPUTE RESOLUTION SONAR ARRAY WITH REAL TIME BLOCKCHAIN NOTARIZATION

(51) International classification	:H04L0009000000, H04L0009320000, H04L0009400000, G06Q0020380000, H04L0009060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

Abstract The proposed invention is a revolutionary system of asserted rights combined with navigational sonar capable of settling maritime boundary disputes beyond the current reliance on courts via a real-time blockchain notarization system of evidence/collateral actionable in multiple jurisdictions. Leveraging an array of strategically placed underwater sonar devices, the system collects extensive acoustic information to map seabed topography and discover submerged objects. It then forwards this information to a central Data Acquisition System, which analyses it to extract meaningful insights. This processed information is fed into a performance Computing Unit for data analysis to produce accurate 'boundary7 maps' including GPS data that ensures accurate georeferencing. In essence, blockchain technology is applied to maintain an auditable and transparent record of this boundary data, where the processed sonar data and maps are aggregated as records into a cryptographic chain on a distributed ledger, safeguarding the integrity of the data and preventing tampering. Monitoring and response are made easier with real-time visualization and an alarm system. Operationally, sonar sensors continuously acquire data, processed by the Data Acquisition System, analyzed by the Computing Unit, and performing blockchain notarization. GPS data offers critical location and time info for accurate mapping. Real-time monitoring is facilitated by boundary-mapping provided by the monitor, constantly monitoring constantly monitoring and giving you predictive capabilities at a glance, and the alarm system is an immediate response to a potential boundary violation. The raw and processed sonar data, along with the boundary maps and the blockchain records of their state and access to it. is stored securely for future reference and analysis. This system also provides distinct advantages over conventional methods: enhanced accuracy in identifying borders, transparency via blockchain notarization, real-time monitoring and lower likelihood of conflict. The present invention offers a thorough and novel process to resolve maritime boundary conflict by utilizing advanced sonar measurement conveniently recorded using a blockchain notarisation to create a sustainable process for a trustless world. With its accuracy, transparency, and tamper-proof nature, the system facilitates peaceful dispute resolution and strengthens maritime security. It is used in maritime surveillance, underwater resource management, scientific research and more. Combined with real-time monitoring and alert systems, which ensure the immediate detection of boundary breaches, this makes the method even more effective. It is a major innovation in maritime boundary management and a modern, technical solution to long-standing international disputes.

No. of Pages : 9 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033895 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : AI POWERED EMOTION ANALYTICS FOR EMPLOYEE ENGAGEMENT AND RETENTION

(51) International classification :G06V0040160000, G06Q0010063900, G10L0025630000, G06F0040300000, A61B0005160000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT 07: Apr-2025/34847/202541033895/Form 2(Title Page) The present invention introduces a novel Al-powered emotion analytics framework designed to transform employee engagement and retention strategies through real-time, multimodal emotional intelligence. By integrating affective computing, organizational psychology, and predictive analytics, the system captures and interprets facial micro-expressions, vocal tone, and textual sentiment to generate actionable insights into workforce emotional states. Unlike conventional HR tools reliant on periodic surveys, this innovation continuously monitors emotional well-being, identifying early signs of disengagement and predicting attrition risks with context-aware precision. Key features include: 1. Adaptive Emotional Baselines - Personalized emotion profiles calibrated to individual, cultural, and role-specific factors 2. Hierarchical Emotion Mapping - Analysis at individual, team, and organizational levels to detect engagement trends 3. Proactive Intervention Engine- Al-driven recommendations for managers, from micro-level recognition prompts to strategic policy adjustments The system incorporates ethical Al governance, ensuring privacy-preserving data collection, bias mitigation, and transparent decision-making. By bridging emotion science and workforce analytics, this invention enables organizations to preempt turnover, enhance managerial empathy, and foster emotionally intelligent workplaces. Applications span hybrid work environments, high-attrition industries, and diversity-inclusive HR practices, positioning it as a paradigm shift in sustainable talent management.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033902 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT ENABLED WASTE REDUCTION SYSTEM FOR LEAN MANUFACTURING

(51) International classification	:G06N0020000000, G06Q0010040000, G06Q0010067000, G06Q0010063900, G06Q0050260000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT 07;Apr-2025/34859/202541033902/Form 2(Title Page) The present invention introduces an loT-Enabled Waste Reduction System for Lean Manufacturing, a transformative solution that integrates advanced sensor networks, edge computing, and artificial intelligence to autonomously identify, analyze, and mitigate waste in real-time production environments. Unlike conventional lean tools that rely on periodic audits and manual interventions, this system establishes a closed-loop, self-optimizing framework that continuously monitors all seven forms of manufacturing waste (MUDA) - transportation, inventory-, motion, waiting, overproduction, overprocessing, and defects - through a multi-layered loT architecture. Key innovations include: • Smart Sensing Layer: A distributed network of RFID, computer vision, vibration, and environmental sensors captures granular data on material flow, equipment efficiency, energy consumption, and operator activities. • Edge-Fog-Cloud Analytics: Lightweight machine learning models at the edge classify waste patterns, while cloud-based cognitive engines employ predictive-prescriptive algorithms to forecast inefficiencies and prescribe corrective actions. • Autonomous Waste Mitigation: The system dynamically adjusts production schedules, triggers predictive maintenance, and optimizes resource allocation through integrated actuators and human-machine interfaces. • Lean 4.0 Integration: Traditional lean methodologies (5S, VSM, Kaizen) are enhanced with real-time digital twins, adaptive workflow optimization, and blockchain-verified continuous improvement logs. Pilot implementations demonstrate 35-40% reduction in material waste, 25-30% decrease in energy consumption, and 15-20% improvement in labor productivity, with return on investment achievable within 6-12 months. The invention bridges the gap between classical lean principles and Industry 4.0 technologies, offering manufacturers a scalable, data-driven pathway to zero-waste operations while maintaining compliance with sustainability standards.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033904 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : LEGAL PROCEEDING MEDIA COVERAGE MONITOR WITH INTEGRATED SENTIMENT ANALYSIS ASIC AND TEMPORAL DATA LOGGING MODULE

(51) International classification	:G06V0040160000, G06Q0050180000, G06F0040300000, G06F0016783000, G06F0016780000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

Abstract This patent outlines a new way to track and analyze media coverage of a vast variety of legal proceedings, with the express objective of providing an accurate and timely view of public perception. It relies on a series of connected cameras to record and analyze audio and video on the spot and then uploads the footage for storage in a cloud environment. An application Specific Integrated Circuit (ASIC) on the cloud platform is dedicated to burst speed sentiment analysis that measures speech, facial expression, and body language to quantify the tone of media content intermediaries. A logging module, pulling from temporal data, correlates these sentiment results to discrete events within proceedings, essentially creating a chronological mapping of coverage. By harnessing this cutting-edge methodology, the study fills in the gaps created by the subjective lens of human analysts and the time-consuming and biased nature of content analysis.

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033915 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : TERPOCARE - AN ORAL ANTI MICROBIAL FORMULATION

(51) International classification	:A61Q0011000000, A61P0029000000, A61P0031040000, A61P0001020000, A61K0006690000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
Abstract The present invention introduces an innovative oral care formulation incorporating Ginkgo biloba-derived bisditerpenoids, recognized for their potent antibacterial and antiinflammatory properties, specifically developed for pediatric dental applications. This formulation effectively combats Streptococcus mutans and Enterococcus faecalis, the primary pathogens responsible for dental caries and endodontic infections, by inhibiting bacterial proliferation and biofilm formation. Studies indicate that this bisditerpenoid-enriched composition exhibits antibacterial efficacy comparable to chlorhexidine, a standard antimicrobial agent. Additionally, it demonstrates strong anti-inflammatory effects, significantly reducing pro-inflammatory cytokines (IL-lp and TNF-a) by up to 65%, thereby alleviating oral tissue inflammation and preventing the progression of dental infections. Designed for versatile applications, the formulation can be integrated into mouthwashes, oral gels, toothpastes, dental varnishes, and coatings, ensuring targeted and sustained therapeutic benefits. The use of an eco-friendly and biocompatible extraction process, employing ethanol or mixed solvent systems, enhances safety for pediatric usewhile preserving the compound's structural integrity and therapeutic efficacy. By combining antimicrobial and anti-inflammatory properties, this invention offers a dualaction solution to effectively address microbial resistance and inflammatory responses in pediatric dental care. It- serves-as a-natural,-sustainable,-and-safe-altemative to-conventional- antimicrobial agents, contributing to enhanced oral health outcomes in children, while minimizing the risks associated with synthetic treatments.

No. of Pages : 8 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033918 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MATHEMATICAL OPTIMIZATION OF AI-GUIDED SIMULATION THERAPY

(51) International classification :G06N0003006000, G16H0050200000, G16H0050500000, G16H0020100000, G16H0010600000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :
Abstract: AI-driven simulation therapy (AIGST) combines artificial intelligence and computational models to improve treatment interventions in areas like psychology, rehabilitation, and precision medicine. This research examines mathematical ' optimization methods to enhance AIGST through improved model precision, lower computational expense, and optimized patient-specific treatment plans. We utilize convex and non-convex optimization, reinforcement learning, and multi-objective optimization to adapt simulations dynamically. The suggested framework promotes flexibility, efficiency, and accuracy in therapy to guarantee data-driven, patient centric results. Our results show that mathematical optimization notably enhances treatment efficacy, opening doors to more smart and responsive therapeutic simulations.

No. of Pages : 13 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541033941 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A METHOD FOR PREPARING A DOUBLE PEROVSKITE FILM, THE FILM AND APPLICATIONS THEREOF

(51) International classification	:H10K0085500000, H01G0009200000, H01G0009000000, H10K0030300000, H10K0071400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT “A METHOD FOR PREPARING A DOUBLE PEROVSKITE FILM, THE FILM AND APPLICATIONS THEREOF” 5 The present disclosure relates to a method for preparing double perovskite films, particularly, vacancy ordered double perovskite films by electrochemical deposition. Particularly, the method of the present disclosure comprises contacting precursor solution of the perovskite with a conductive substrate and applying power supply of positive potential ranging from about 1.0 10 V to about 2.0 V to enable deposition of the perovskite film on the substrate, thereby obtaining double perovskite film. The perovskite films obtained by the method of the present disclosure are continuous, have large area, rough morphology, show water and acid stability and are suitable for photoelectrochemical hydrogen generation, showing continuous light to hydrogen conversion for more than 100 hours.

No. of Pages : 43 No. of Claims : 16

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033979 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : UNMANNED AUTONOMOUS DEVICE FOR DISASTER MANAGEMENT

(51) International classification	:A01D0034835000, B64C0039020000, B64U0101300000, G05D0001000000, G08B0005000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

An unmanned autonomous device for disaster management, comprising a cuboidal housing 101 having four perpendicularly installed telescopic rods 102 with motorized omnidirectional wheels 103 for a locomotion of housing 101, multiple propellers 104 navigate housing 101 over a waterbody, an imaging unit 105 detect individuals endangered by disaster, a projection unit 106 projecting images onto site of disaster for guiding rescue workers towards detected individuals, a cutting unit cutting of debris and obstruction for removal of trapped individuals, an L-shaped telescopic link 107 is having a cutting disc 108 for cutting of debris, two gripping units lifting of cut debris, a cylindrical chamber 112 containing multiple rescue rings 113 connected via straps 114 coiled in motorised roller 115, two panels 116 connected via scissor arrangements 117, each of panels 116 enabling a collapsing of panels 116 into a compact footprint, to provide an overhead barrier against falling debris and rain.

No. of Pages : 29 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541033980 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : BABY INCUBATING DEVICE

(51) International classification :A61B0005000000, F16C0011060000, G08B0021020000, H04L0067550000, A61B0005020500

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A baby incubating device comprises of a rectangular base 101 having a telescopic rod 102 attached underneath the base 101 through a ball and socket joint 103, multiple motorised omnidirectional wheels 104 for locomotion of base 101, a housing 105 with sliding doors 106 is provided using a rocking arrangement 107 for rocking baby, a sensing unit for monitoring vitals of the baby, an imaging unit 108 which is in synchronisation with sensing unit determining baby waking from sleep, a moisture sensor detecting moisture underneath the baby, the ball and socket joint 103 to tilt the housing 105, a communication unit to transmit notification to a computing unit to enable interfacing with device, a monitoring module to determine a medical issue faced by baby, a speaker 109 to alert regarding seeking medical attention, a wearable band 110 to receive notification, vibration unit 111 for providing feedback.

No. of Pages : 23 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541034039 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : BLOCK CHAIN BASED ELECTRONIC VOTING SYSTEM

(51) International classification :G07C0013000000, G06F0021320000, B61B0001020000, A61J0007000000, G06V0040120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A block chain based electronic voting system comprises of a vertical wall 101 consisting of a first side 102 and a second side 201 for vote casting, a verification platform 103 mechanically fastened with the first side 102 for authentication of user identity via assessing documents of a user by means of an imaging unit 104, pre-configured with OCR, a biometric scanner 105 to match the biometric details with the user's biometric details, a link 106 installed over the platform 103 to apply an indelible ink over a finger of the user via integrated bristles 107, a voting base 202 associated with the second side 201 for casting of vote via a kiosk 207 embodied with LEDs 208 and buttons 209 representing an election candidate, a roller 203 wrapped with a sound proof fabric 204 over the second side 201 to cover the user via extendable rods 205.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :07/04/2025

(21) Application No.202541034078 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Development of War Field Spying Robot with Night Vision Camera

(51) International classification :H04N0007180000, G05D0001000000, B25J0013080000, G08B0013196000, B25J0005000000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Presently the surveillance of international border areas is very daunting task. The security forces are patrolling the border in hostile conditions. They are getting help from surveillance cameras already mounted but they cover very limited areas. The cameras already mounted at a fixed position, is not of much use as we cannot change the camera view in real time. Also, it is not possible to mount the cameras in the forest areas as the trees obstruct the view of the camera. This paper explains how to design and implement wireless robot which will enable us to control the robot with the help of internet and it will be able to detect the living bodies with the help of PIR sensor. It will help in rescue operation and user can access the video transmitted from the remote area such as the sensitive areas or areas which are beyond our reach. The total system contains mobile robot, controlled with the Internet, which has camera mounted on it and also it has a Ultrasonic sensor for detection of living bodies. User will be able to control the robot through internet, thus, providing user with wireless control of robot. Also, information regarding the detection of living bodies will also be given to user on the webpage from the Ultrasonic sensor and simultaneously user is able access the video transmission from the robot. The camera mounted on the robot is able to move horizontally around its vertical axis and vertically along its vertical axis. Camera movement is controlled through webpage at the user interface, thus, providing user with enhanced view of the surroundings. A wireless camera on the robot is also used to feed live video during day and night. With the aid of an Arduino microcontroller, the robot is commanded manually as well as automatically. Additionally, this robot makes use of a few sensors to gather information and convey the information to the controlling authority, generally an Arduino microcontroller, which regulates the activities of the robot. The operator or owner of the robot can also detect the presence of metal explosives utilizing metal detecting elements in addition to the live video streaming to carry out environmental surveillance which can also be used for defense related applications.

No. of Pages : 10 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541034081 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Non-Invasive Wearable Patch for Continuous Multi-Vital Sign Monitoring and AI-Based Health Prediction

(51) International classification :A61B0005000000, G16H0040670000, A61B0005024000, A61B0005145500, A61B0005020500
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The invention discloses a non-invasive wearable health monitoring system (100) for continuous and real-time tracking of multiple physiological parameters. The system comprises a multi-electrode sensor array (101) for acquiring electrocardiogram, impedance cardiography, and body impedance signals; a photoplethysmography sensor (102) for measuring oxygen saturation and heart rate; a temperature sensor (103); a motion sensor (104); and a processing unit (105) for deriving cardiovascular and metabolic health metrics. An analytics module (204) applies machine learning techniques to detect anomalies and generate predictive alerts. The system further includes a power management system (106), a battery unit (108), a wireless communication module (107), and a data transmission interface (109) for synchronizing data with mobile applications (110) and clinical dashboards (111). The sensor array includes repositionable electrodes to enable application-specific monitoring. The invention enables remote health tracking and early detection of risk conditions, supporting preventive care, chronic disease management, and telemedicine applications.

No. of Pages : 27 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :07/04/2025
(21) Application No.202541034090 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Powered Wildlife Conflict Prevention System with Cognitive Behaviour Analysis, Multi-Sensor Fusion, and Adaptive Deterrence

(51) International classification :A01M0029160000, A61B0005000000, A01M0029180000, G06V0020520000, A01M0029100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a hardware-integrated AI-powered wildlife conflict prevention system that enables real-time detection, behavioural analysis, and adaptive intervention to mitigate human-wildlife conflicts. The system comprises a modular hardware unit that integrates thermal and optical cameras, motion sensors, acoustic detectors, and an optional drone-assisted surveillance module, all interfaced with an embedded Edge AI processor to perform on-device cognitive inference. Through multi-sensor data fusion and AI-based behaviour-to-emotion mapping, the system infers wildlife intent in real time, distinguishing between foraging, alertness, stress, and aggression. A novel, non-invasive wildlife reidentification module runs locally on the embedded processor, enabling long-term tracking of individual animals using biometric and behavioural features, without requiring GPS collars or RFID tags. The system is deployed on embedded computing hardware (e.g., Raspberry Pi 4, NVIDIA Jetson), enclosed in a weatherproof housing and powered by a solar energy subsystem comprising photovoltaic panels, charge controllers, and battery backup. A connected PoE switch and 4G module ensure autonomous operation and communication in remote or infrastructure-poor environments. Based on real-time emotional state predictions, the system activates adaptive deterrents, such as bio-acoustic alarms, LED strobe lights, ultrasonic pulses, and ground-based vibrational barriers, using embedded actuation logic tailored to species-specific responses and designed to prevent habituation. A built-in predictive analytics engine processes both live sensor streams and historical event logs to generate dynamic conflict risk maps, enabling early warnings and intelligent resource allocation by forest, agricultural, and conservation authorities. Designed for scalable deployment in farmlands, forest fringes, transportation corridors, and protected reserves, the invention offers a real-time, autonomous, and field-deployable hardware solution for reducing economic losses, human casualties, and wildlife mortality.

No. of Pages : 23 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034102 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Advanced Customizable Suction Mechanism for Enhanced Hospital Hygiene

(51) International classification :G16H0040200000, A61L0009140000, A61L0002220000, A61L0002240000, G05B0019042000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
Advanced Customizable Suction Mechanism for Enhanced Hospital Hygiene Manpower requirements in healthcare settings are receiving increased attention due to the rising number of patients and various infections. Medical errors may occur due to work overload and excessive pressure in the workplace. Since many people visit hospitals for various reasons, maintaining a high standard of cleanliness is essential. The fear of communicable diseases has a profound impact on people's minds due to the presence of mutated viruses, bacteria, and cells that lead to new diseases, which can easily affect the hospital environment. The invention relates to a programmable, automated suction and sanitizing device to enhance hospital hygiene by detecting and removing infectious biofluids such as blood, urine, and chemicals from floors, particularly in ordinary wards and laboratories. The system includes a TCS3200 color sensor for fluid detection such as blood based on color recognition, an HC-SR04 ultrasonic sensor for detection of distant obstacles, and IR sensors for detection of near-objects. The device is operated by an Arduino Uno R3 microcontroller. It is fitted with a 12V vacuum pump for wet and dry suction, followed by a scrubber and sanitizing spray system for effective floor disinfection. A Bluetooth module provides wireless control through a mobile app, with manual control through directional commands or autonomous control based on sensor input. Motion is supplied by four 12V DC motors operated by an L298N motor driver and fueled by a 12V Li-ion battery(rechargeable)., with voltage regulator for power supply. The innovative device automates hospital cleaning activities, reduces dependency on manual effort, reduces infection risks, and enhances overall hygiene and safety in health facilities.

No. of Pages : 11 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034107 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR ENHANCING GEOPOLYMER CEMENT PERFORMANCE THROUGH THERMAL, MECHANICAL, AND MECHANO-CARBONATION TREATMENTS

(51) International classification :C04B0028000000, C08J0005240000, C04B0012000000, C22C0038020000, C04B0014280000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This invention reveals a new method for enhanced geopolymer cement properties by pre-treatment techniques including thermal, mechanical and . mechano-carbonation treaiments. The optimized mix design consists of GG BS, Mexican ash, NaOH, Na,SiO,, and MgO, whereby a pre-treatment. process improves reactivity and microstructural density. ·Aiuminosilicate dissolution is greatly aided by thermal treatment at'200 °C for 4 hours, while r:::....!e prolonged ball-milling for 3 hours gives rise to a refinement in size and an enhancement of compressive strength to 33.26 MPa. A following step of mechano-carbonation then densifies, affording. the highest compressive strength, measured at 43.5 MPa, and a flexural strength of 6.4 MPa, which is coupled with a highly reduced water absorption of 3%. The ambient curing period of 14 days promotes optimal performance. The invention presents an environmentally safe, high-strength geopolymer cement alternative to . conventional cement with a corresponding reduction in carbon emissions: This technique will greatly enhance durability and mechanical performances, . therefore is suitable for structural applications in harsh environments and for 25 sustainable construction projects.

No. of Pages : 17 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034108 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMARTSIGNCAP: AI-ENABLED IOT WEARABLE FOR REAL-TIME SIGN-TO-SPEECH TRANSLATION FOR SPEECH-DISABLED INDIVIDUALS

(51) International classification :G06N0003045000, G06F0003010000, G06N0003080000, G06V0040200000, G06F0040580000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses a SmartSign Translator Cap, anAl-powered wearable device designed to facilitate real-time commtmication between individuals with hearing or speech impairments and the general population. The device employs computer vision, deep learning, and loT-based embedded systems to accurately interpret sign language gestures and convert them into spoken output. The head wearable cap comprises a high-resolution camera for capturing hand and facial gestures. Inertial Measurement Unit (IMU) sensors to track head and hand movements. An embedded microcontroller executing advanced deep learning models, such as Convolutional Neural Networks (CNNs) and Transformer-based architectures, for precise gesture recognition. A speech synthesis module for audible output. A companion Android application providing real-time translation display, customizable settings, and cloud-based adaptive leaming. The device is lightweight, portable, and user-friendly, making it suitable for diverse applications in education, healthcare, workplaces, and daily interactions. By integrating AI, loT, and human-computer interaction technologies, the Smat1Sign Translator Cap enhances inclusivity: empowers individuals with disabilities, and advances rcnl-timc sign language translation glohally.

No. of Pages : 14 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034130 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : EVENT MANAGEMENT USING AUGMENTED REALITY AND VIRTUAL REALITY

(51) International classification :G06T0019000000, G06F0003010000, G06F0003048200, G06T0015000000, G06F0011360000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: This project involves the integration of Augmented Reality (.'\R) and Virtual Reality (VR) in event managcnlt'IH to provide a rcal-timt:. immcrsivc. and intcracti,·c planning experience. Traditional event planning relics on physical mock ups. static blucprims, and multiple site visits: leading to high costs. ineflicienf..'ies. and last-minute modifications. To nddress these challenges. this system iinroduccs a 3D visualization platliJrm that enables user:-; to design. customize, and preview event byouts before execution. The AR module allows users to scan a venue using a smartphone or AR headset and overlay digital elements, such as decorations, stage setups, and seating arrangements, ensuring precise planning and reducing errors. The VR feature offers an immersivc walkthrough experience, allowing users to virtually explore their event space: assess layouts: and make modifications before finalization. Additionally, anAlpowcrcd chat bot assists in event planning by providing creative decor ideas, menu suggestions, nnd budget estimates, enhnncing decision-mnking. A web-based platform enables users to submit their event details. receive cusLOmized AR;VR mudds. and finalize their event plans with precision. An image generator adds a fi..m and interactive visual element to personalize event designs further. By integrating AR. VR. AI. and real-time customization, this project revolutionizes event planning by making it mor(· t.·fTiciem: cost-effective, and engaging.

No. of Pages : 10 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034131 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RAKSHA-SMART BAND FOR SENIOR CITIZENS: EMPOWERING HEALTH AND SAFETY

(51) International classification :A61B0005000000, A61B0005110000, G16H0010600000, G16H0020300000, H04L0067120000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Tibial bone fractures in orthopedic injuries are usually accon:panied by a relatively long time of immobilization as well as controlled rehabilitation. In ·order to overcome the problems that arise in the recovery process, this paper introduces an "Internet ofThings"-based "smart shoe." The presented Smart shoe will be capable of monitoring and improving healing because it incorporates realtime data collection, gait analysis, and therapeutic feedback mechanisms. With pressure sensors, accelerometers, and gyroscopes, the smart shoe can determine weight-bearing patterns, identify improper movement, and monitor activity levels. loT connectivity easily transfers the information it captures to a mobile application or a cloud platform, enabling healthcare providers to monitor a patient's improvement from a distance. Alerts.can be sent if a user deviates from / prescribed rehabilitation protocols, preventi~~rential complications. The shoe comes with adaptive cushioning- and vibration therapy modules for maximum comfort and blood circulation. This innovative solution empowers a patient to have accurate real-time information about the recovery process and helps the physician in his clinical decision-making process. The smart shoe is the promising step toward personalized health care, which incorporates the concept of loT for improving outcomes in patients with tibial fracture.

No. of Pages : 10 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202541034132 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SMART IOT BASED WATER MONITORING SYSTEM

(51) International classification :G01N0033180000, G06N0020000000, H04W0004380000, G06Q0050060000, G06Q0040040000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT SMART lOT BASED WATER QUALITY MONITORING SYSTEM The present invention relates to a Smart loT-Based Water Quality Monitoring System designed to provide real-time assessment and analysis of water quality parameters. The system comprises multiple sensor nodes deployed in water bodies to measure critical parameters such as pH, turbidity, dissolvedoxygen, temperature, conductivity, and total dissolved solids(TDS). These sensors are integrated with a microcontroller and a wireless communication module (e.g., Wi-Fi, LoRa, or GSM) to transmit data to a cloud-based platform. The collected data is processed using edge computing techniques to t:nsure rapid anomaly detection and minimize latency. A cloud-based dashboard and mobile application provide real- time visualization, alerts, and predictive analytics using machine learning algorithms. The system further includes an automated calibration mechanism to enhance sensor This invention aims to improve water resource management by enabling remote monitoring, early contamination detection, and automated ale11s, there by reducing manual intervention. The system is scalable for applications in industrial effluent monitoring, agricultural water quality assessment, municipal water supply, and environmental conservation eff011s.

No. of Pages : 11 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034135 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM AND METHOD FOR PROVIDING INVESTMENT ESSENTIALS TO YOUNGSTERS AND BEGINNERS USING ARTIFICIAL INTELLIGENCE

(51) International classification	:G06Q0040060000, G06N0020000000, G06Q0040000000, G16H0050200000, G09B0007020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The system (100) comprises a user interface module (102), a data collection module (104), a financial database (106), a processing unit (108), an artificial intelligence engine (110), an investment recommendation module (112), an educational content module (114), and an output generation unit (116). The processing unit (108) processes integrated data from the user and the database to structure input for the artificial intelligence engine. The artificial intelligence engine (110) applies machine learning algorithms to analyze user data, predict suitable investment options, and adjust content delivery. The investment recommendation module (112) generates real-time investment suggestions based on AI outputs and market data. The educational content module (114) delivers context-sensitive investment literacy material according to user understanding level and learning pace. The invention promotes investment awareness and encourages confident participation in financial planning among young and novice users.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034204 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : WEB EVALUATION USING OPINION MINING

(51) International classification	:G06Q0030060100, G06Q0030018000, G06Q0030028200, G06Q0030020100, G06Q0030060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The Web Evaluation using Opinion Mining system aims to enhance the security and transparency of online shopping by analyzing customer reviews and website credibility. With the rise of fraudulent e-commerce platforms, users often struggle to determine the legitimacy of shopping websites. This project utilizes AI-powered sentiment analysis and machine learning to evaluate user feedback, detect fake reviews, and generate credibility scores for online stores. By providing real-time alerts on suspicious websites and offering personalized recommendations, the system helps consumers make informed purchasing decisions while minimizing the risk of online fraud. Through automated analysis and intelligent insights, the platform fosters a safer and more reliable e-commerce experience. Additionally, the system provides real-time alerts about suspicious websites and offers personalized recommendations based on user preferences and verified consumer experiences

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034206 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : RAKSHA-SMART BAND FOR SENIOR CITIZENS: EMPOWERING HEALTH AND SAFETY

(51) International classification :A61B0005000000, A61B0005080000, A61B0005010000, A61B0005020500, G16H0040670000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT: Sleep apnea is a disorder where a person’s breathing repeatedly stops and starts during sleep. This leads to poor sleep quality and can cause health issues like fatigue, heart problems, and high blood pressure. There are two main types: obstructive (caused by airway blockage) and central (caused by the brain failing to signal breathing).Sleep apnea commonly affects people who are overweight, older adults, and those with certain medical conditions like heart disease or Neuromuscular disorders. It’s also prevalent in men more than women and can affect children, especially if they have enlarged tonsils. Additionally, premature infants often experience apnea due to their underdeveloped respiratory systems. The sleep apnea may also lead to death if unnoticed. Smart pillows are revolutionizing the approach to managing sleep apnea. These pillows incorporate sensors that can detect apnea events and also control apnea by producing vibrations in the pillow. They also sent a message to the physician and the caretaker’s mobile number when apnea occurs. The short message contains the time and the respiratory rate during the apnea occurance. Smart pillow improves sleep quality, better health management, and reduced risk of complications. ‘The pillow can provide real-time monitoring of breathing and gently prompting users to control apnea when irregularities occur, potentially reducing obstructive apnea episodes. Data collection and detailed analytics offer insights into sleep patterns, enabling users and healthcare providers to make informed decisions about treatment. By optimizing sleep positions and integrating with devices like CPAP machines, the pillow can enhance therapy adherence, ensure safety through alerts during severe events, and improve Overall comfort and well-being for users with sleep apnea.

No. of Pages : 19 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034211 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : GROCERGO-(SELF SERVICE GROCERY ORDERING KIOSK)

(51) International classification	:G06Q0030060100, G06Q0010080000, G06Q0010087000, G06Q0010063100, G06Q0010063700
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT The GrocerGo kiosk is a technologically advanced, automated grocery ordering system designed to address supply chain inefficiencies and accessibility challenges in underserved urban and rural areas. Utilizing a touch-screen interface with an intuitive user experience (UX) design, the kiosk enables users to browse, select, and purchase essential goods efficiently. The system is optimized for low-resource environments, reducing dependency on physical inventory storage and minimizing operational overhead by leveraging automated order processing and digital payment integration.The kiosk's architecture supports real-time inventory management, ensuring optimal stock levels and reducing waste. It is designed to integrate with local delivery networks, enabling last-mile logistics in areas with limited transportation infrastructure. This is achieved through partnerships with local delivery services, ensuring timely doorstep delivery of goods. Additionally, the system is compatible with government welfare programs, allowing beneficiaries to redeem entitlements directly through the kiosk, streamlining the process of accessing subsidized goods. From a technical standpoint, the kiosk employs cloud-based backend systems for data storage and analytics, enabling real-time monitoring of user behaviour, inventory levels, and transaction histories. This data-driven approach facilitates predictive analytics for demand forecasting and resource allocation. The system's modular design allows for scalability and adaptability to diverse geographic and socioeconomic contexts. By combining automation. loT-enabled logistics , and digital integration , the GrocerGo kiosk serves as a scalable solution to bridge supplydemand gaps, enhance resource distribution efficiency, and improve quality of life in underserved communities

No. of Pages : 15 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034229 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : ZnO THIN FILMS AND A METHOD OF FABRICATING THE SAME THEREOF

(51) International classification	:H01L0029786000, C22C0001040000, B82Y0030000000, H01S0005183000, B82Y0040000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention provides a novel and scalable method for fabricating (100)-oriented ZnO thin films with tunable wettability and enhanced optoelectronic properties. Unlike conventional ZnO films, which predominantly exhibit (002) orientation, this method enables the growth of stable (100)-oriented films using solution-based deposition techniques. The invention allows for precise control over film thickness, crystallographic orientation, and defect states, thereby optimizing optical and electrical performance. A key feature of the invention is its ability to modulate surface wettability from hydrophilic to super-hydrophobic states without requiring additional chemical modifications. The films also exhibit stable electrical properties under UV exposure, making them ideal for applications in optoelectronic devices, sensors, self-cleaning coatings, and biomedical applications. By eliminating the need for high-vacuum or high-temperature processing, this method offers a cost-effective and scalable solution for industrial production of ZnO films with tailored properties.

No. of Pages : 33 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034234 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : NEXT-GENERATION BLOCKCHAIN-IOT SYSTEM AND METHOD FOR ENERGY GRID OPTIMIZATION

(51) International classification :B60L53/66, G06N5/02, G06Q20/14, G06Q20/22, G06Q50/06, G16Y10/35, H04L9/32

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present disclosure relates to a blockchain-powered system (100) and method (300) for real-time renewable energy distribution, optimization, and carbon credit management. The system (100) integrates IoT devices to monitor energy flow, ensuring fault-tolerant redistribution and dynamic grid balancing. An AI-optimization module (214) analyzes real-time and historical energy data to enhance energy distribution and reduce transmission losses. A tokenized carbon credit module (216) issues blockchain-based sustainability credits, enabling transparent tracking of renewable energy contributions. Smart contracts automate energy trades and enforce compliance with predefined regulations. The system (100) further integrates electric vehicle (EV) charging stations, allowing users (108) to buy and sell renewable energy directly for vehicle charging. Service-Level Agreement (SLA)-driven optimization ensures efficient energy storage and distribution. The blockchain ledger maintains tamper-proof, auditable records of all transactions. The system (100) democratizes the energy market, enhances grid reliability, and promotes sustainability through secure, decentralized energy trading and AI-driven energy management.

No. of Pages : 28 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034260 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Automating the Optimal Temperature to Increase the Yield in Sericulture by Using Internet of Things

(51) International classification :A01K0067040000, G06Q0030060100, F24F0011300000, H01M0008061200, G06Q0010083200
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION: Title: Automating the Optimal Temperature to Increase the Yield in Sericulture by Using Internet of Things. The invention relates to an IoT-based system for optimizing temperature and humidity in silkworm rearing sheds. The system comprises temperature, humidity, and light sensors integrated with an ESP32 microcontroller that automates environmental control. Actuators including Peltier modules and humidifiers adjust conditions dynamically. Remote monitoring via the Blynk app ensures real-time oversight. The present invention ensures higher silk yield, minimal manual intervention, and enhanced operational efficiency in sericulture.

No. of Pages : 23 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034335 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : IOT-ENABLED SMART HELMET

(51) International classification :B60K0028060000, A42B0003040000, G06Q0050400000, H04W0004900000, A42B0003300000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
ABSTRACT This invention presents an loT -enabled smart helmet designed to enhance road safety by preventing drunk driving and ensuring helmet compliance. The system integrates an MQ-3 alcohol sensor to detect intoxication and a pressure sensor to confirm proper helmet use. A microcontroller (Arduino) processes these inputs and controls a relay module to pn::vt:ul the bike from starting if safety conditions are not met. If alcohol is detected or the helmet is removed during a ride, the system triggers a controlled engine shutdown. A GPS module (Neo-6M) enables real-time tracking, while a GSM module (SIM900) sends automated alerts with GPS coordinates to emergency contacts. Additionally, safety violations are logge~ in a web-based application for monitoring. By leveraging loT automation, real-time monitoring, and wireless communication, this smart helmet promotes responsible riding, enhances regulatory enforct:ruent, and reduces road accidents caused by intoxication and negligence

No. of Pages : 7 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025

(21) Application No.202541034342 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : APPLIANCE FOR CORRECTION OF CLASS III WITH OPEN BITE WITHOUT VERTICAL HEIGHT INCREASE

(51) International classification :A61C0007360000, A61C0007080000, A61C0007060000, A61F0005560000, A61C0008000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein is an appliance (100) for correcting open bite and facilitating bone-anchorage maxillary protraction that comprises a denture base (102,104) positioned in the oral cavity to fit securely over the dental arches, further comprising a maxillary splint (102), and a lower block (104). The appliance (100) also includes a plurality of hook (106-110) adapted to be incorporated into the denture base (102,104), further comprising a first pair of hooks (106a,106b), a second pair of hooks (108a,108b), and a third pair of hooks (110a,110b). The appliance (100) also includes intermaxillary elastics (112) attached to the plurality of hook (106-110) and adapted to apply forces at angles of 30 degrees and 60 degrees relative to the occlusal plane to facilitate maxillary movement and mandibular correction.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034344 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTERACTIVE MOBILE APPLICATION FOR NUTRITION MANAGEMENT OF THE LACTATE WOMEN

(51) International classification :A23L0033150000, G16H0020600000, A23L0033000000, A61K0036740000, A23L0033155000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
ABSTRACT OF THE INVENTION (to be given along with complete specification on separate page) The nutrition management of lactating women in rural areas of India presents unique challenges and opportunities to improve maternal and infant health outcomes. This abstract explores the context of nutrition management for lactating women, considering the socio-economic and cultural factors that influence dietary practices and access to nutritious food. In rural India, lactating women often face limited resources, inadequate healthcare facilities, and prevailing traditional beliefs regarding postpartum nutrition. These factors can impact the quality and quantity of food intake during the critical lactation period, affecting maternal health and breast milk composition. The significance of tailored nutrition interventions that consider the specific nutritional. requirements of lactating women. It highlights the importance of ·promoting nutrient-rich diets that meet the increased caloric demands during lactation, including essential nutrients like proteins, vitamins, and minerals. Moreover, the role of locally available and culturally appropriate food sources is to address malnutrition and support optimal maternal and child health. This study calls for comprehensive research· that includes the automated machine learning theorem(s) encapsulated into a Mobile App. This leads to interactive findings from wh,ich effective nutrition e.ducation and behavior change strategies improve dietary practices among lactating women in India. Leveraging community-based ·approaches, integrating traditional knowledge, and collaborating with local health workers can .enhance the implementation of nutrition interventions in resource-constrained settings: By addressing the nutrition management· of lactating women in rural.a.reas of India, this research aims to contribute to developing evidence-base.d policies and programs that prioritize maternal and child nutrition. Ultimately, it seeks to empower lactating women and the.ir communities with the knowledge and. resources necessary for sustainable. health improvements, fostering better maternal and child health outcomes in rural India.

No. of Pages : 11 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034413 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Voice-Assisted CPR Device for Real-Time Emergency Response

(51) International classification :A61H0031000000, A61B0005000000, G16H0010600000, G16H0070200000, G16H0080000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Voice-Assisted CPR Device for Real-Time Emergency Response Abstract: Sudden cardiac arrest is a critical medical emergency that demands prompt and accurate Cardiopulmonary Resuscitation (CPR) to maximize the likelihood of survival. However, CPR performed incorrectly—especially by individuals without formal training—often reduces its effectiveness. To address this issue, a Voice-Assisted CPR Device has been developed to offer real-time monitoring and guided feedback.The core of the system is an Arduino UNO microcontroller, which serves as the central control unit, accepting information from sensors and triggering required responses. The product comes equipped with the AD8232 ECG sensor, which constantly monitors the electrical activity of the heart to identify the lack or irregularity of a pulse.In the event of an unusual reading or absence of pulse, the product has an integrated audio module that gives voice commands to the user to initiate CPR. To evaluate chest compression precision, the system employs an FSR 406 pressure sensor that measures the force applied and verifies that it is within guidelines for recommended compression levels.Instantaneous feedback is given through both a voice output system and an LCD display, assisting the user in maintaining the proper depth and rhythm of compressions. A step-down transformer is employed to control voltage levels and provide a safe operation of the electronic components.The device is designed to be portable and user-friendly and is appropriate for non-medical individuals and is perfect for use in public settings like schools, homes, and shopping centers—where quick action is necessary before professional assistance arrives.The system, with real-time biomedical sensing, embedded processing, and voice guidance, not only improves CPR quality but also increases the confidence of the responder. This innovation fills the critical time gap between the onset of cardiac arrest and medical workers arriving on the scene, and it can save more lives.

No. of Pages : 11 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/04/2025
(21) Application No.202541034422 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SYSTEM FOR WASTE BINS MONITORING AND WASTE MANAGEMENT

(51) International classification :B65F0001140000, G06N0020000000, B65F0001000000, G06Q0010300000, G06F0011300000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A system 100 for waste management includes a network of waste bins 100A configured with a plurality of sensors 102 in each waste bin to monitor a plurality of parameters can be at least one of waste bin fill level, waste temperature, humidity, weight, movement, and waste composition. A microcontroller 104 can process sensor data and transmit the processed sensor data via a wireless communication module 110 to a central cloud-based platform 100B. The central cloud-based platform 100B can analyze processed sensor data using predictive data analytics and anomaly detection techniques to predict waste generation patterns and identify anomalies. A collection management module 116 can optimize waste collection routes and schedules dynamically based on the predicted waste generation patterns and identified anomalies. A user interface 118 may provide actionable insights on a computing device associated with user displaying bin fill status, optimized collection routes, schedules, and waste type categorizations.

No. of Pages : 30 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034453 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Distributed Generation Control and Optimization System Using Artificial Intelligence and Machine Learning

(51) International classification	:H02J0003380000, G06N0020000000, G06N0003080000, G06N0007010000, G06Q0050060000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
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(57) Abstract :

An intelligent distributed generation (DG) system enhanced by artificial intelligence (AI) and machine learning (ML) is disclosed. The system forecasts load and renewable energy generation, optimizes DER operation, and dynamically controls energy flow in real time. It utilizes deep learning for prediction, reinforcement learning for adaptive control, and anomaly detection for fault tolerance. The invention ensures efficient, reliable, and resilient integration of distributed energy resources in modern power grids.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034454 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Artificial Intelligence-Based Smart Grid Management and Optimization System

(51) International classification :G06Q0050060000, G06N0003045000, H02J0003000000, G06N0003044000, G06N0003080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A smart grid management system powered by artificial intelligence (AI) is disclosed. The system includes sensors, edge AI units, and centralized AI controllers. It utilizes machine learning and deep learning models for forecasting electricity demand, detecting faults, optimizing power routing, and integrating renewable energy. The system features self-healing capabilities and supports real-time demand response and pricing models. This invention enhances grid reliability, efficiency, and sustainability through autonomous, data-driven operations.

No. of Pages : 8 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :08/04/2025

(21) Application No.202541034480 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Eco-Friendly Cement Substitute: Ternary Concrete with Fly Ash and Ground Granulated Blast Furnace Slag for Superior Strength and Durability

(51) International classification :C04B0028080000, C04B0111000000, C04B0028000000, G01N0033380000, C04B0018080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Concrete is a blend of aggregate, water, and cement along with admixtures that are generally employed in the construction of structures all around the world. In this cement plays a major role as a binder in concrete. The cement manufacturing process liberates enormous amounts of greenhouse gasses into the atmosphere. Researchers have developed various alternative materials to cement. However, limitations are there for their higher utilization. The strength and durability are reduced if we use higher dosages of GGBS or fly ash as an additional material for cement. In this regard, there is a need to develop a ternary blended concrete by using GGBS and fly ash. In this study, the potential of using fly ash and GGBS as substitute materials for cement is evaluated. The combination of these materials to produce a binder opens up new opportunities for improving pozzolanic activities, which enhances concrete performance. The effect of several percentages of these two materials on the mechanical characteristics of the concrete was examined. There was an improved performance of the material so formed out of which replacing cement with an equal amount of fly ash and GGBS at 40% weight exhibited better performance. Further, the compressive strength prediction was assessed by using regression analysis. Applying the response surface method to the relationship between response variables and input parameters led to the regression equation. This strategy helps to predict the outcomes of experiments with a reasonable margin of error. The results of this study show that combining fly ash and GGBS as substitutes for cement enhances the performance of concrete.

No. of Pages : 12 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/02/2019
(21) Application No.201931005591 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PRODUCTION OF STEEL CARTRIDGE CASE FOR GRENADES IN AUTOMATIC GRENADE SYSTEMS.

(51) International classification	:C22C0038540000, C22F0001043000, G01N0033200000, C21D0008000000, C22C0038440000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a process for indigenously developing steel cartridge case for grenades in automatic grenade systems wherein medium-carbon steel is subjected to more than 80% hot roll reduction, around 15% cold reduction, hardening by quenching in water and prolonged high temperature tempering treatments resulting in spheroidization and coarsening of cementites giving rise to steel of desirable grade for preparation of grenade cartridge cases which are subjected to a sequence of operations as outlined in Fig.1 of the drawings. The resulting products are closely inspected, tested for corrosion, followed by chemical analysis and metallographic examination before field testing and subsequent manufacture of RUDRA grenades for AGS-17.

No. of Pages : 25 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/10/2023

(21) Application No.202331066248 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : COMPOSITIONS COMPRISING ENCAPSULATED ASHWAGANDHA EXTRACT AND PROCESS OF PREPARATION THEREOF

(51) International classification :A61K0036810000, A61K0036480000, A61K0036820000, A61K0036484000, A61K0009200000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses compositions comprising the plant extract and process of preparation thereof. Particularly, the invention relates to the composition comprising Ashwagandha extract containing 0.5-10% of Withanolide glycoside encapsulated in a natural protective coat exhibiting enhanced bioactivity and bioavailability.

No. of Pages : 40 No. of Claims : 21

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :15/12/2023

(21) Application No.202331085890 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD AND SYSTEM FOR LOW-LATENCY PROACTIVE VIRTUALIZED CLOUD RADIO ACCESS NETWORK (LLP-VCRAN).

(51) International classification	:G06F0009455000, H04L0025020000, H04L0041147000, H04W0072120000, H04W0076400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

ABSTRACT Title: METHOD AND SYSTEM FOR LOW-LATENCY PROACTIVE VIRTUALIZED CLOUD RADIO ACCESS NETWORK (LLP-VCRAN). This invention provides a system and method to dynamically allocate baseband unit (BBU) cards to remote radio heads (RRHs) satisfying the computational and bandwidth requirements of the traffic from/to RRHs, while optimizing the total power consumption at the BBU pool in a Cloud Radio Access Network (CRAN) comprising a 10-Gigabit capable symmetric passive optical network (XGS-PON) as fronthaul for switch based operative connection between a BBU and an RRH and a controller to dynamically and proactively control the switches in said CRAN based on a predictive transformer model running in said controller that predicts traffic volume for next transmission cycle for judicious allocation of the BBU cards to the RRHs for that next cycle leading to reduction in the end-to-end delay.

No. of Pages : 26 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :28/03/2024

(21) Application No.202431025727 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A DEVICE AND METHOD OF FRICTION STIR WELDING

(51) International classification	:B23K0020120000, B23Q0003157000, B23C0005240000, C22C0038140000, B23K0020220000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :

A DEVICE AND METHOD OF FRICTION STIR WELDING The present invention discloses a method (150) for friction stir welding of aluminum alloy and titanium alloy. The method comprises the steps of positioning (152) a nickel interlayer between the aluminum alloy and the titanium alloy at a weld interface; securing (154) the workpiece on a welding fixture to prevent displacement during welding. The method further comprises providing (156) a tungsten-carbide tool with a shoulder and a pin configured for friction stir welding, and rotating and plunging (158) the tungsten-carbide tool into the weld interface under predetermined process parameters, generating frictional heat to soften the materials without melting. The method comprises traversing (160) the tungsten-carbide tool along the weld interface to stir the softened materials and the nickel interlayer, thereby promoting diffusion bonding between the aluminum alloy and the titanium alloy; and controlling (162) the tool rotational speed, traverse speed, and plunge depth to ensure metallurgical bonding while minimizing defect formation. Figure 1A

No. of Pages : 23 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :22/11/2024

(21) Application No.202431091111 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : DUAL FUNCTIONALIZED NANO-FORMULATION FOR CANCER TARGETED DRUG DELIVERY AND METHOD FOR PREPARATION THEREOF

(51) International classification :A61K47/61, A61K47/64, A61K47/69, A61P35/00

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Disclosed herein a dual ligand-based nano-formulation and a method for preparing the same as a drug delivery system for targeting breast cancer. The drug delivery system is prepared utilizing the properties of carbon-dots and potential ligands, which efficiently delivers the anticancer drug to the target site demonstrates in vitro and in vivo. Said drug delivery system exhibits significantly greater cytotoxicity and apoptosis compared to the drug alone.

No. of Pages : 39 No. of Claims : 12

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :13/12/2024
(21) Application No.202431098520 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MACHINE LEARNING ALGORITHMS FOR IOT: POWERING INTELLIGENT SYSTEMS

(51) International classification	:G06N20/00, H04L67/12, H04L9/40, H04W4/70, G06F9/50
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
MACHINE LEARNING ALGORITHMS FOR IOT: POWERING INTELLIGENT SYSTEMS ABSTRACT The invention introduces machine learning (ML) algorithms for Internet of Things (IoT) systems to enhance intelligence and performance. It integrates edge and cloud computing to efficiently deploy ML models on resource-constrained devices while reducing latency. The system utilizes federated learning, model pruning, and continuous adaptation to improve efficiency and accuracy. Data is processed and filtered to ensure timely, relevant decision-making. Additionally, privacy-preserving techniques such as differential privacy are employed to secure sensitive data. This approach enables intelligent, adaptive, and scalable IoT systems capable of automating tasks and optimizing operations in real-time.

No. of Pages : 10 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/12/2024
(21) Application No.202431103926 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : METHOD FOR PRODUCING FLATTENED BAMBOO PANELS FROM ENGINEERED BAMBOO

(51) International classification :B27J1/00, B27K5/06, B27K5/00, B27M1/08
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
METHOD FOR PRODUCING FLATTENED BAMBOO PANELS FROM ENGINEERED BAMBOO Provided is a method (100) for producing flattened bamboo panels from engineered bamboo. The method comprises splitting (102) bamboo culms into sections to form bamboo strips. Further, the method comprises softening (104) the bamboo strips by at least one of steam treatment, chemical soaking, or heat application to increase flexibility of the bamboo strips. Furthermore, the method comprises performing (106) a controlled pressing, using a presser or roller system, of the softened bamboo strips to make relatively flat bamboo strips. Upon performing controlled pressing, the method comprises bonding (108) the relatively flat bamboo strips using an adhesive or a heat-based compression process to form a flat, and uniform bamboo panel. Thereby, the method comprises conditioning (110) the flat and uniform bamboo panel to achieve flattened bamboo panels with smooth, homogeneous textures. Figure 1

No. of Pages : 14 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :13/03/2025

(21) Application No.202531022775 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Sensor-Oligo-Based Diagnostic Kit and Method for Amplification-Free Detection of miR-135b-5p in Cervical Cancer and Precancerous Lesions

(51) International classification	:C12Q0001700000, C12Q0001681800, C12Q0001682500, C12Q0001688600, G01N0033569000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT Sensor-Oligo-Based Diagnostic Kit and Method for Amplification-Free Detection of miR-135b-5p in Cervical Cancer and Precancerous Lesions The present invention relates to a novel sensor-oligonucleotide-based diagnostic kit and method for amplification-free detection of miR-135b-5p in clinical samples. This innovative technique uses a dual-labelled sensor-oligonucleotide, composed of RNA bases with a fluorescent dye and quencher pair, to detect miR-135b-5p through endogenous RNA-induced silencing complex (RISC)-mediated cleavage. The invention enables specific and rapid detection of miR-135b-5p in intact cells and cell-free systems such as cervical swab samples without the need for RNA isolation or PCR amplification. This method provides a cost-effective and high-throughput triage test for cervical cancer and precancerous lesions, showing strong correlation with qRT-PCR. The diagnostic kit comprises the sensor-oligo, reaction buffers, and controls for reliable miRNA detection. The method offers enhanced sensitivity, specificity, and ease of use, paving the way for its application in clinical settings for early, non-invasive detection and monitoring of cervical cancer.

No. of Pages : 26 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/03/2025

(21) Application No.202531024361 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : IoT-Enabled Real-Time Detection and Recognition of Moving Biological Entities in Smart Vehicle Interiors

(51) International classification :G08B0021220000, B60H0001000000, G08B0021240000, G06V0020590000, A61B0005000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an IoT-based system for the real-time detection and recognition of biological entities, such as humans or pets, within a vehicle's interior. The system utilizes a combination of Passive Infrared (PIR) sensors and ultrasonic distance sensors to monitor the presence and movement of living organisms inside the vehicle. When a biological entity is detected, the system sends an alert to the vehicle owner's mobile device through a GSM module, and provides remote access to the vehicle's interior via an integrated IP camera. This IoT-enabled system enhances vehicle safety by preventing accidents related to unintentional entrapment, such as leaving children or pets unattended in the vehicle, and ensures the well-being of passengers by providing timely notifications and remote monitoring capabilities.

No. of Pages : 15 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :27/03/2025
(21) Application No.202531029109 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : A NOVEL VI-SHAPED ROTOR FOR INTERIOR PERMANENT MAGNET MOTOR

(51) International classification :H02K1/27, H02K1/276, H02K21/14
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a novel VI-shaped Interior Permanent Magnet (IPM) synchronous motor system designed to enhance torque production, power factor, output power, and motor efficiency. The system comprises a stator with a silicon steel core featuring curved top stator slots housing double-layer parallel windings. An air gap of 0.5 mm to 1 mm with a preferred value of 0.7 mm is determined to reduce leakage inductance. The rotor includes a metal shaft with rotor poles formed by V-shaped magnets and an I-shaped magnet positioned in the middle of the V-slot gap between the two V-shaped magnets for stability. A silicon steel rotor shaft ensures durability under high torque. This novel VI-shaped IPM system offers a high torque production, power factor, output power, and superior efficiency for automotive, industrial, and home applications. Also, the cogging torque and torque ripple are within the industrial standards for high-performance applications.

No. of Pages : 27 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/04/2025
(21) Application No.202531036617 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Biogenic synthesis of ZnO and TiO2 nanoparticles from Trichoderma asperellum

(51) International classification :C12N0001140000, B82Y0030000000, C12R0001885000, C08K0003220000, A01N0063380000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
"Biogenic synthesis of ZnO and TiO2 nanoparticles from Trichoderma asperellum" The present invention relates to a biogenic synthesis of zinc oxide (ZnO) and titanium dioxide (TiO_2) nanoparticles using the fungal strain Trichoderma asperellum. The ZnO and TiO2 nanoparticles from Trichoderma asperellum show antimycotic activity against Bipolaris sorokiniana; the causative agent of spot blotch disease in barley; at the concentration of 80 mg/L and 60 mg/L, respectively; wherein, the ZnO nanoparticle are 11.23 nm and TiO2 nanoparticles are 51.11 nm in size. The present invention also discloses the method of preparation of ZnO and TiO2 nanoparticles from T. asperellum. Compared to conventional chemical fungicides, these nanoparticles offer an environmentally safe and sustainable approach to disease management, minimizing toxic residues and promoting agricultural sustainability. The invention provides a scalable and cost-effective alternative for fungal disease control in cereal crops, ensuring improved crop yield and food security.

No. of Pages : 27 No. of Claims : 2

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/04/2025

(21) Application No.202531036753 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : A CLOUD-SCADA BASED (HIL) TESTING SOLUTION FOR RCPI CONTROLLER BASED MULTILEVEL GRID FOLLOWING STRING INVERTER

(51) International classification	:H02M0001000000, H02M0007538700, H02M0007480000, H02M0003335000, H02S0050100000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a system (100) and a method for optimizing the operation of a power conversion apparatus in grid-connected systems, such as photovoltaic (PV) power plants. The method includes measuring operational parameters from the load and grid through the field measuring module (107). These measured parameters are transmitted to the Master Controller (101) via a communication channel, which processes them to generate control signals. The control signals are then transmitted to the slave PWM controller (102), which generates closed-loop PWM signals which then sent to the Power conversion apparatus driver module (108) to control the switching operations of the IGBT switches (103), thereby regulating the power conversion apparatus. The system (100) continuously monitors the performance of the apparatus and adjusts the control signals accordingly to ensure efficient and stable power conversion. [To be published with figure 2]

No. of Pages : 38 No. of Claims : 30

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/04/2025
(21) Application No.202531036893 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AUTOMATIC MAT–TYPE PADDY SEEDLING PREPARATION MACHINE

(51) International classification :A01G0009029000, B65G0041000000, A01C0015000000, B65B0013180000, A01G0009080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automatic mat-type paddy seedling preparation machine (100). The machine (100) comprises a conveyor frame (8), a hopper holder frame (7), a base soil hopper (1), a seed hopper (2), and a cover soil hopper (3) coupled with the conveyor frame (8) and the hopper holder frame (7). The machine (100) further comprises an inlet seedling tray holder (16) and an outlet seedling tray holder. A tray (20) is removably mounted on the first end of the conveyor frame (8). The machine (100) further includes a motor (15) coupled with each of the base soil hopper (1), the seed hopper (2), and the cover soil hopper (3). The machine (100) further includes a conveyor setup (9, 10, 11, 12, 13) coupled with the conveyor frame (8) and a control panel (18) that includes a control unit configured to control a speed of the motor (15). Figure 1.

No. of Pages : 22 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :16/04/2025
(21) Application No.202531036943 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : An inbuilt reverse osmosis filter with concentrate water management system

(51) International classification :C02F0001440000, B01D0061020000, B01D0061100000, B01D0061120000, C02F0009000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an inbuilt reverse osmosis filter with concentrate water management system. In an outlay of five floor building (100), the RO unit (200) is installed over the delivery pipe (202) receiving pressurised water from the pump (101). The pressurised water enters the RO unit at initial section of delivery pipe (201) and leaves it at the other section of delivery pipe (202). The RO unit (200) also experiences the column pressure due to the height of the delivery pipe (202) above it, which is the additional pressure required to carry out reverse osmosis. The concentrate and the raw water further go to the tank (102) at the rooftop for other household purpose. The filtered drinking water is collected at the outlet (207). The RO unit is attached to the existing raw water delivery pipe at the two ends, the first (201) from where the pressurised water comes in and the other end (202) from where the water goes out for the general household purpose. The pressurised raw water enters the unit (203) and because of the increased pressure proportion of the water will permeates through the membrane (204). The membrane is mounted over a metallic mesh (205) for the support, which is fitted (supported) inside the main chamber (206) or outer casing. The permeated water that will be used for drinking will be collected through the outlet (207). The water that does not pass through the membrane is a concentrate and will be delivered for general household purpose through the other end of the unit (208). Fig. 1 & 3(b)

No. of Pages : 15 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/04/2025
(21) Application No.202531037237 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTERVAL FUZZY DECISION MAKING ON AGRICULTURE WATER RESOURCES MANAGEMENT

(51) International classification	:G06Q0050060000, G06Q0050020000, H04L0009400000, G06N0005048000, G06F0009500000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT [505] The interval fuzzy decision-making system introduces an innovative AI-driven analytical framework for agricultural water resources management that integrates multi-criteria evaluation protocols with adaptive uncertainty handling mechanisms, facilitating real-time allocation optimization, dynamic resource adjustment, and robust prioritization methods while maintaining sustainable agricultural production and operational adaptability for consistent water conservation outcomes. [510] The comprehensive decision framework employs adaptive fuzzy algorithms and intuitive uncertainty quantification protocols, utilizing embedded linguistic processing arrays and energy-efficient computational systems to ensure timely allocation recommendations, enhanced resource distribution, and optimal irrigation scheduling while maintaining continuous monitoring capabilities. [515] The integrated methodology combines interval-valued fuzzy logic with artificial intelligence-driven decision systems, leveraging pattern-variable assessment signals and multi-factor sustainability indicators to optimize allocation procedures and management workflows for maximum water efficiency and minimal waste exposure during critical growing seasons. [520] The novel responsive decision architecture features engineered uncertainty-resistant components with specialized behavioral uncertainty quantification protocols, enabling complex multi-stage resource allocation verification while ensuring decision consistency and performance optimization across various climatic conditions without compromising system reliability. [525] The innovative design incorporates strategic prioritization mechanisms for enhanced resource protection and operational sustainability, utilizing optimized fuzzy rule-based systems and adaptive decision technology to ensure legitimate resource allocation while maintaining functionality across diverse agricultural environments and usage scenarios. [530] Implementation methodology emphasizes scalable integration and efficient evaluation sequences, implementing interactive prioritization measures and scarcity response algorithms to achieve superior resource management, enhanced crop protection, and unauthorized water usage prevention while ensuring technological simplicity during drought emergencies. [535] The system demonstrates exceptional adaptability through comprehensive integration of uncertainty modeling protocols and intelligent decision technologies, validating its effectiveness across various agricultural contexts and seasonal scenarios while maintaining consistent allocation performance and operational efficiency under diverse conditions. [540] The developed framework enables sustainable and reliable management of agricultural water resources through streamlined, AI-powered decision systems, providing significant advantages over traditional management approaches through interval-valued fuzzy mechanisms, adaptive allocation protocols, and improved resource stewardship while maintaining superior crop productivity during critical water scarcity interventions.

No. of Pages : 13 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/04/2025
(21) Application No.202531037297 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : MODULAR URBAN DRAINAGE SYSTEM FOR CLIMATE ADAPTATION

(51) International classification :G06Q0050260000, E03F0001000000, H04L0067120000, E03F0003020000, G08B0021100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Abstract MODULAR URBAN DRAINAGE SYSTEM FOR CLIMATE ADAPTATION The present invention discloses a Climate-Adaptive Urban Drainage System (CAUDS) for mitigating urban flooding through real-time data-driven infrastructure adjustments. The system integrates IoT sensors (rainfall, soil moisture, flow/pressure sensors), machine learning (ML) models, and modular adaptive hardware to dynamically optimize drainage performance during extreme weather. IoT sensors transmit environmental data to a predictive ML engine, which employs LSTM networks and CNNs to forecast flooding risks and generate actionable commands. Modular components—smart valves with PID control, expandable HDPE pipes (300–450 mm), and permeable pavers—autonomously adjust flow rates, storage capacity, and infiltration efficiency. A Central Control Unit (CCU) coordinates real-time adjustments, interfaces with smart city platforms, and prioritizes groundwater recharge via bio-retention units. The invention reduces retrofitting costs by 40%, curtails flood downtime by 65%, and aligns with sustainable urban development goals.

No. of Pages : 24 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/04/2025
(21) Application No.202531037389 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ENVIRONMENT CONTROL SYSTEM FOR MUSHROOM CULTIVATION

(51) International classification :E04D0009000000, A01G0018000000, A01G0018200000, A01G0018690000, A01G0024250000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
An environment control system for mushroom cultivation comprising of an enclosure 101 for cultivating mushrooms, characterized in that: an outer layer 103 for weather protection made of corrugated metal sheets coated with a reflective foil layer, an insulation layer 104 fabricated underneath outer layer 103 for thermal regulation constructed with rice husk ash, lime, and clay / soil mixture, an inner layer 105 for humidity control and constructed with coconut coir mats, clay-coated panels and PVC / Polyethylene Sheets, a roofing layer 102 for heat and moisture protection constructed with thatched roof and plastic under-layer, mushroom bed 106 constructed with paddy straw, gram flour, lime, and gypsum for supporting mushroom growth, multiple louvered vents 108 with mesh filters 109 are installed in enclosure 101 for passive ventilation, and plurality of solar-powered exhaust fans 110 is configured with enclosure 101 for maintaining an optimum temperature within enclosure 101.

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/04/2025
(21) Application No.202531037390 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : CIGARETTE SMOKE PURIFICATION DEVICE

(51) International classification :B01D0053860000, G01N0033000000, B01D0046620000, A61Q0015000000, F01N0003027000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
A cigarette smoke purification device, comprising a body 101 with an inlet 102 for unpurified smoke, where a first and second filter 301, 302 respectively are installed to filter large particulates and volatile organic compounds (VOCs) and benzene, respectively, followed by a third filter 303 to oxidize toxic gases such as formaldehyde and hydrogen cyanide, a fourth filter 304 to trap ammonia and nitrogen oxides (NOx), and a cylindrical member 305 with a mesh 306 for degradation of impurities, assisted by a motorized fan 308 for optimized distribution, a fifth filter 307 to convert CO to CO2 and reduce other harmful gases, with purified air exiting through an outlet 201, an UV-light source 309 arranged with the mesh 306 for microorganism elimination, an automatic mist sprayer 310 and air freshener installed within body 101 for odour mitigation, and a real-time indicator 104 for displaying purification status.

No. of Pages : 21 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/04/2025
(21) Application No.202531037391 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : SUSTAINABLE LIGNIN-INCORPORATED NANOGEL FOR POTENTIAL WOUND HEALING ACTIVITY

(51) International classification	:A61K0009060000, A61K0009000000, A61P0017020000, A61K0047320000, A61L0026000000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to a sustainable lignin-incorporated nanogel designed for potential wound healing applications. The nanogel is composed of lignin nanoparticles extracted from residual fermented Hybrid Napier grass, combined with an amphiphilic copolymer. The lignin nanoparticles are incorporated into the polymer gel matrix to form a controlled-release nanogel that promotes wound healing. Upon application, the nanogel transitions from a sol phase to a gel phase, providing a moist environment conducive to tissue regeneration. The formulation is free from synthetic antimicrobial agents, offering a natural alternative for wound care. Additionally, the preparation process ensures a biodegradable and eco- friendly product, making it a promising candidate for sustainable wound healing therapies. The nanogel's composition and preparation process highlighting its potential to replace traditional wound care products with a more sustainable and effective solution.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/04/2025
(21) Application No.202531037510 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : AI-Driven IoT-Based Intelligent Logistics Optimization System for Real-Time Tracking, Predictive Maintenance, and Automated Route Planning

(51) International classification :G06Q0010083500, G06Q0010047000, G06Q0010080000, G01C0021340000, G06N0020000000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention discloses an AI-driven IoT-based intelligent logistics optimization system designed to enhance real-time fleet tracking, predictive vehicle maintenance, and automated route planning. The system integrates IoT-enabled sensors installed on logistics vehicles to capture critical data such as location, engine health, and cargo conditions, which is then transmitted to a centralized AI platform. Advanced machine learning algorithms analyze this data to predict mechanical issues, schedule maintenance, and dynamically generate optimal delivery routes based on traffic, weather, and delivery constraints. The system significantly improves logistics efficiency, reduces operational costs, and ensures timely, safe delivery of goods.

No. of Pages : 18 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/04/2025

(21) Application No.202531037589 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : HYBRID SOLAR MOSQUITO TRAP WITH AI-BASED LURE CONTROL AND CO2 GENERATION

(51) International classification :A01M0001020000, H02S0040440000, A01M0001040000, A01M0001060000, G06F0003048830

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention provides a hybrid solar mosquito trap with AI-Based Lure Control and CO2 generation. The invention presents a square stainless steel mosquito trap powered entirely by solar energy. It incorporates UV LEDs, a fermentation-based CO_2 generator, a fan-based suction mechanism, and an ESP32 microcontroller that regulates trap activity based on sensor inputs. Designed to run autonomously, it adapts to the environment using AI for energy efficiency and higher trap success rates.

No. of Pages : 14 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/04/2025
(21) Application No.202531037677 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : INTEGRATED SYSTEM FOR ERP TRANSFORMATION IN BANKING: A SCALABLE AND SECURE ARCHITECTURE FOR END-TO-END BANKING PROCESS AUTOMATION, CUSTOMER-CENTRIC SERVICE MANAGEMENT

(51) International classification	:G06Q0010100000, G06Q0030020100, G06Q0010063100, G06Q0010063700, C12M0001340000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
INTEGRATED SYSTEM FOR ERP TRANSFORMATION IN BANKING: A SCALABLE AND SECURE ARCHITECTURE FOR END-TO-END BANKING PROCESS AUTOMATION An integrated system and method for ERP transformation in the banking industry is disclosed. The invention provides a scalable and secure architecture that automates end-to-end banking operations, enhances customer service, and enables real-time data analytics using cloud and AI technologies. The system includes a modular, cloud-native ERP platform, an AI-powered automation engine, a real-time analytics module, and customer-centric service management interfaces. The architecture supports legacy integration, complies with regulatory standards, and delivers predictive insights, enabling banking institutions to enhance operational efficiency, customer satisfaction, and strategic agility.

No. of Pages : 10 No. of Claims : 8

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/04/2025

(21) Application No.202531037890 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Formulation and Process for Caffeine-Free, Zero Added-Sugar, Tea-like Herbal Beverages for Children.

(51) International classification :A23F3/34, A61K36/81, A61K36/59, A61K36/9066, A61K36/53

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to health-promoting, caffeine-free, and zero added-sugar herbal beverage formulations specifically designed as tea-like or tea-substitute drinks for children aged two years and above. The invention discloses two distinct compositions: (i) A formulation comprising turmeric, black pepper, cinnamon, cardamom, cloves, ginger, lemongrass, and star anise, which is intended to promote general health, immune support, and anti-inflammatory benefits; and (ii) A formulation comprising turmeric, black pepper, cardamom, cinnamon, cloves, ginger, Brahmi, Gotu Kola, blue pea, hibiscus, and lemongrass, aimed at supporting cognitive function, memory, and holistic wellness. The invention further encompasses a unique preparation process involving temperature-controlled co-drying of turmeric and black pepper to bioactivate curcumin, thereby improving its bioavailability. The formulations are intended to serve as a child-appropriate, health-promoting alternative to conventional caffeinated teas and sugary beverages. They are designed for infusion-based, boiled-based, or ready-to-drink (RTD) formats, and may be consumed hot or cold, with or without milk, depending on the formulation.

No. of Pages : 29 No. of Claims : 7

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/04/2025

(21) Application No.202531037895 A

(43) Publication Date : 25/04/2025

(54) Title of the invention : Artificial Intelligence Influence on Indian Political Science : Trends, Challenges, and Opportunities

(51) International classification :G06Q0050260000, G07C0013000000, G06N0020000000, G06Q0030025100, G06Q0010067000

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(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :

Abstract The invention of Artificial Intelligence (AI) in Indian political science introduces a revolutionary approach to understanding, analyzing, and managing political processes. By leveraging AI technologies such as machine learning, big data analytics, and predictive modeling, this innovation transforms how political behavior, electoral outcomes, governance, and public policy are studied and executed. AI enables political analysts, campaigns, and governments to process and analyze vast amounts of data from diverse sources such as voter demographics, social media, and past election trends. This provides real-time, data-driven insights that can enhance the precision and effectiveness of political strategies, enabling tailored campaigns that resonate with specific voter segments and predict electoral results with high accuracy. AI also offers significant advancements in governance by enabling more efficient public service delivery and promoting transparency in government operations. By analyzing datasets on government initiatives, AI can identify inefficiencies, optimize resource allocation, and recommend policy adjustments, fostering evidence-based decision-making. Furthermore, AI's potential to improve political participation is noteworthy. It empowers citizens with accessible information on candidates, policies, and government actions, encouraging informed political engagement and active involvement in democratic processes. However, the introduction of AI in politics raises ethical concerns regarding data privacy, algorithmic bias, and the potential for misinformation. Addressing these challenges through strong regulatory frameworks is crucial to ensuring that AI benefits political science while safeguarding democratic principles. Overall, the integration of AI into Indian political science represents a paradigm shift, offering opportunities to enhance political transparency, improve governance, and encourage greater civic engagement, ultimately shaping the future of democracy in India.

No. of Pages : 13 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025

(21) Application No.202531037955 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Carbon based ZrO2-ZnO Nanocomposite for 4-Nitrophenol Degradation

(51) International classification :C02F1/72, C02F1/58
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to the synthesis of a CCAC/ZrO2-ZnO nanocomposite from Croton caudatus biomass for degrading 4-nitrophenol (4-NP) in wastewater. The nanocomposite is characterized using techniques like XRD, FT-IR, SEM/TEM, and BET surface area analysis. Its photocatalytic performance showed an impressive 98.2% degradation of 4-NP under UV light with a dosage of 0.07 g/L, initial concentration of 40 ppm, and pH 6 after 80 minutes. Degradation intermediates are identified via LC-MS, and recycling studies indicated 78.5% efficiency after multiple cycles. DFT calculations supported the findings, while in-silico docking suggested antibacterial potential, advocating further optimization. The invention highlights the CCAC/ZrO2-ZnO nanocomposite as a sustainable photocatalyst for water treatment.

No. of Pages : 26 No. of Claims : 6

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025
(21) Application No.202531037961 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : ADAPTIVE SELF-LEARNING WASTE MANAGEMENT SYSTEM WITH AI, IOT, AND BLOCKCHAIN

(51) International classification :G06Q0010300000, H04L0009000000, B65F0001140000, G06Q0010063700, G06Q0050260000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
This innovative solution revolutionizes urban waste management by integrating real-time monitoring with adaptive scheduling and decentralized data integrity. The system utilizes Al along with loT to modify waste collection routes and schedules dynamically through live data from sensors in bins and waste collection vehicles. The adaptive optimization approach minimizes resource waste and lowers carbon emissions while improving operational efficiency. The secure and transparent blockchain ledger system tracks waste management operations allowing stakeholders like municipalities and waste management companies to maintain traceability and accountability. The design of the invention facilitates sustainable urban living by tackling worldwide waste management problems with scalable modules appropriate for different urban settings. The solution combines Al with loT technology along with blockchain principles and insights from urban planning and environmental science to create a data-focused system that evolves through increasing data inputs. Predictive analytics improves urban sanitation while reducing environmental harm. The system represents a progressive framework which cities can use to achieve sustainable and resilient waste management solutions that promote cleaner, healthier urban environments.

No. of Pages : 24 No. of Claims : 9

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025

(21) Application No.202531037966 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Detecting Brain Tumor from MRI Image Using MATLAB."

(51) International classification :G06T0007000000, G06T0007110000, G16H0050200000, G16H0030400000, A61B0005055000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automated system for detecting and classifying brain tumors from Magnetic Resonance Imaging (MRI) images using advanced image processing techniques implemented in MATLAB. The system enhances diagnostic accuracy and efficiency by automating the segmentation and analysis of brain tissues. The process begins with preprocessing MRI images to remove noise, improve contrast, and eliminate non-brain elements. Key features such as tumor size, shape, texture, and intensity are then extracted for analysis. Using a combination of segmentation methods—classification-based, region-based, and contour-based—the system accurately isolates and identifies tumor regions. A machine learning classifier is employed to categorize the tumor as benign or malignant. The system provides a visual output with the tumor region highlighted and quantitative data including tumor size and classification results. Experimental results show that the system achieves up to 97% accuracy, offering a reliable and reproducible solution for clinical diagnosis and medical research.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025
(21) Application No.202531037969 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : PCOD Detection by using Image Processing Algorithms

(51) International classification :G06N0003045000, G06N0003080000, G16H0050200000, G06T0007000000, G06T0007110000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention relates to an automated diagnostic system for the detection of Polycystic Ovarian Disease (PCOD) using image processing and machine learning techniques implemented in MATLAB. The system analyzes ovarian ultrasound images to identify morphological characteristics indicative of PCOD. The invention comprises multiple processing stages, including image acquisition, preprocessing, segmentation, feature extraction, and classification. Preprocessing enhances image quality by applying grayscale conversion, noise reduction, and contrast enhancement. Segmentation techniques such as Otsu's thresholding, edge detection, and morphological operations are employed to isolate the ovarian region and detect follicular structures. Key diagnostic features including follicle count, follicle size, shape, and ovarian volume are extracted from the segmented image. These features are then used to classify the condition as PCOD-positive or normal using machine learning algorithms such as Support Vector Machines (SVM), Decision Trees, and Convolutional Neural Networks (CNNs). The system significantly reduces human dependency, diagnostic variability, and time, offering a non-invasive, accurate, and cost-effective solution for PCOD detection. The invention further includes a graphical user interface (GUI) and is compatible with telemedicine platforms and IoT-enabled devices for real-time, remote diagnostics

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025
(21) Application No.202531037974 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "Carbon Footprint Calculation using AI"

(51) International classification	:G06N0020000000, G06N0005040000, G06N0003006000, G06N0003080000, H04L0009400000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention provides an artificial intelligence-based system for calculating, monitoring, predicting, and optimizing carbon emissions across various industries and sectors. The system integrates multiple data sources, including satellite imagery, IoT sensors, industrial monitoring equipment, transportation networks, and environmental systems, to collect real-time and historical emissions-related data. A data processing module cleans and integrates the data, while an AI computational engine—comprising machine learning, deep learning, and natural language processing models—analyzes the data to predict emission levels, detect anomalies, and simulate reduction strategies. An optimization module generates dynamic and real-time recommendations for reducing emissions based on predictive insights. The system includes a user interface for displaying dashboards, reports, and interactive visualizations, as well as an optional security framework for ensuring data privacy and integrity. The invention offers a scalable, automated, and intelligent solution for managing carbon footprints, enabling improved environmental decision-making and compliance with sustainability objectives.

No. of Pages : 14 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025

(21) Application No.202531038095 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "Temperature-Synchronized Water Delivery System"

(51) International classification :G01N0033180000, G06Q0050060000, C02F0001000000, G05B0019042000, C02F0001440000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automated water management system designed to regulate water quality and temperature based on real-time environmental data. The system includes a microcontroller (such as an Arduino Uno), which interfaces with a Peltier thermoelectric module for cooling or heating water, a TDS (Total Dissolved Solids) sensor for continuous water quality monitoring, and a DHT11 sensor to track ambient temperature and humidity. The system operates in both automatic and manual modes, adjusting water conditions as needed to maintain optimal quality and temperature. A relay module ensures safe operation of high-power components, and the system is designed to be powered by renewable energy sources like solar or wind power. This system provides an energy-efficient, sustainable solution for water management in applications such as agriculture, domestic use, and municipal water supply, with a focus on improving efficiency, water quality, and resilience to extreme weather conditions.

No. of Pages : 13 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025

(21) Application No.202531038103 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : Automated Melanoma Detection System

(51) International classification :G06T0007000000, G06N0003045000, G06N0003080000, A61B0005000000, G16H0050700000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to an automated melanoma detection system that utilizes artificial intelligence and deep learning techniques to analyze dermoscopic images and classify skin lesions as benign or malignant. The system comprises a data preprocessing module to enhance image quality through normalization, augmentation, and noise reduction, followed by a feature extraction process using pre-trained Convolutional Neural Networks (CNNs) such as VGG16 and ResNet. A classification module then evaluates the extracted features to determine the nature of the lesion, supported by performance metrics including precision, recall, F1-score, and ROC-AUC. A graphical user interface (GUI) allows users to upload dermoscopic images and receive real-time diagnostic results. The invention provides a fast, accurate, and user-friendly tool to assist healthcare professionals in early melanoma detection, reducing diagnostic errors and improving patient outcomes.

No. of Pages : 12 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/04/2025
(21) Application No.202531038110 A
(43) Publication Date : 25/04/2025

(54) Title of the invention : "Smart Gesture-Controlled Virtual Mouse for Enhanced Human Computer Interaction with AI Voice Controlled Chatbot"

(51) International classification :G06F0003010000, G06F0003030000, G10L0015220000, G06F0003160000, G06V0040200000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
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(57) Abstract :
The present invention discloses a Smart Gesture-Controlled Virtual Mouse integrated with an AI Voice-Controlled Chatbot for enhanced human-computer interaction. The system utilizes a combination of sensors, including cameras, infrared detectors, accelerometers, and gyroscopes, to detect and interpret hand and finger gestures in real time using computer vision and machine learning algorithms. These gestures simulate traditional mouse functions such as clicking, scrolling, dragging, and zooming, enabling touchless control of digital devices. In addition, the system incorporates an AI-powered voice chatbot employing natural language processing (NLP) to recognize and respond to voice commands, allowing users to execute system tasks, control applications, and interact conversationally with devices. Real-time feedback is provided via visual, auditory, or haptic cues to confirm gesture recognition. The invention is platform-independent and supports cross-device integration through Bluetooth, Wi-Fi, or USB connectivity. Applications include assistive technology, healthcare, smart home automation, education, and virtual/augmented reality, providing a multimodal, accessible, and hygienic alternative to traditional input devices.

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(21) Application No.202531038208 A
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(54) Title of the invention : SOCIAL NETWORKING SYSTEM AND METHOD THEREOF

(51) International classification	:G06Q0050000000, H04L0009400000, H04L0067306000, H04L0051520000, H04L0009320000
(86) International Application No Filing Date	:NA :NA
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(57) Abstract :
“SOCIAL NETOWRKING SYSTEM AND METHOD THEREOF” Present disclosure relates a social networking system (100). The system (100) comprises a plurality of mobile devices (104) associated with a plurality of registered users (106), and a server (102). The server (102) is configured to receive, via the mobile devices (104), user details associated with the registered users (106), where the user details comprise at least one user interest. Further, the server (102) is configured to monitor the real-time location of the mobile devices (104) and the respective registered users (106) when the users (106) are online. The server (102) is further configured to identify, within a predefined geographic range around each of the registered users (106), a first set of users (106) having the same at least one user interest. Further, the server (102) is configured to display the user details and the real-time location of the identified first users (106) to each other and further connect them upon mutual authorization or mutual request acceptance. FIG. 1

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(54) Title of the invention : FORMULATION AND OPTIMIZATION, OF SUSTAINED-RELEASE METOPROLOL SUCCINATE MATRIX BEADS FOR CONTROLLED RELEASE

(51) International classification :A61K0009200000, A61K0009500000, A61K0031138000, A61K0047320000, A61K0009160000

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(57) Abstract :
Formulation and Optimization, of Sustained-Release Metoprolol Succinate Matrix Beads for Controlled Release. This invention describes a formulation, optimization, and evaluation of sustained-release matrix beads of Metoprolol Succinate (I.P.). The beads are prepared using a technology involving a matrix of Gelatin, Agar-Agar, Polyethylene Glycol (PEG), and Sodium Starch Glycolate (SSG) as critical excipients. The process involves encapsulating the drug in the matrix beads using a solvent-evaporation method, followed by refrigeration to form uniform spherical beads. The formulation process is designed to ensure controlled drug release, aimed at enhancing therapeutic efficacy and reducing the frequency of dosing. Evaluation parameters include size, shape, drug content, weight variation, and color consistency. A significant drug loading of 0.87 mg per bead was achieved. This technology provides a promising approach to improving the bioavailability and controlled delivery of Metoprolol Succinate for long-term therapeutic management.

No. of Pages : 21 No. of Claims : 10

(12) PATENT APPLICATION PUBLICATION
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(21) Application No.202531038637 A
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(54) Title of the invention : DECENTRALIZED REAL ESTATE MARKETPLACE

(51) International classification :H04L0009000000, G06Q0050160000, H04L0009320000, G06Q0020380000, H04L0067104000
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(57) Abstract :
This innovation pertains to a decentralized real estate marketplace that utilizes blockchain technology, smart contracts, and decentralized storage to automate, secure, and ensure clarity in real estate transactions. By employing tokenization through Non-Fungible Tokens (NFTs) and intelligent escrow processes, the system facilitates peer-to-peer (P2P) trading of real estate properties without the involvement of conventional third parties such as brokers, banks, or notaries. This method not only removes the significant expenses linked to intermediaries but also improves the security and effectiveness of property transfers. The incorporation of blockchain guarantees that all transactions are transparent, resistant to tampering, and conducted according to established terms, fostering trust among participants while optimizing the entire process.

No. of Pages : 14 No. of Claims : 1

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(19) INDIA

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(54) Title of the invention : A composite material for high performance friction linings for drum brakes and a process for the preparation thereof

(51) International classification :C08K0003040000, C08L0063000000, B29C0070080000, H05K0009000000, B29B0007900000

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Filing Date :NA

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(57) Abstract :
This invention relates to a composite material for application as brake pad lining comprising layers of basalt fibres embedded in an epoxy matrix, augmented with graphene nanoplatelets (GNPs) as secondary nanofiller reinforcements, the composite being a eight-layer symmetrical laminate arranged in the following sequence of fibre alignment: {(0˚/90˚) / (±45˚)2 / (0˚/90˚) // (0˚ /90˚) / (±45˚)2/ (0˚/90˚)} Fig. 1

No. of Pages : 21 No. of Claims : 9