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The Institution of Engineers (India)

U.P. State Centre, Lucknow

in association with

SMS LUCKNOW
School of Management Sciences
Lucknow,

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MNNIT Alumni Association
Lucknow Chapter

Souvenir

One Day National Seminar
on

Sources of Planet Energy, Environmental & Disaster Science :
Impact of Glacier Melting & Climate Change
(SPEEDS-2022-23)

26th March, 2023

Venue:
The Institution of Engineers (India)
Uttar Pradesh State Centre, Engineers Bhawan River Bank Colony, Lucknow-226018

School of Management Sciences, Lucknow

Since its inception in 1995, SMS is continuously growing in recognition and respect in the industry and in the academic world alike. After achieving a respectable name in the field of management, the venture got extended to Lucknow in the year 2008.

We have not only emphasized on transforming students personality through our various efforts like organizing soft skill workshops, seminars & conferences, personality development programmes but also conducting industrial visits from time to time. Industrial exposure has also been made through continuous interaction with industry experts from different fields so as to give an insight to the corporate world.

SMS Lucknow emphasizes on overall grooming and personality development of its students. On account of our significant contribution in various academic dimensions, we have been appreciated by various organizations at frequent intervals. The specializations we offer in our PGDM programme are HR, FINANCE & MARKETING.

SMS Institute of Technology is approved by AICTE and affiliated to Dr. APJ Abdul Kalam Technical University. The Institute offers B. Tech programme in Computer Science, Electrical & Electronics Engineering, Electronics & Communication, Mechanical Engineering and Civil Engineering. SMS also offers MBA under the aegis of Dr. APJ Abdul Kalam Technical University. The SMS Group has been actively involved in quality dispensation of technical and higher education on pan-India basis. The Group has also been credited for innovating virtual methods of dissemination of education in collaboration with various International Universities. The Institute houses many felicitations and recognitions. Recently It has been awarded **"Education Leadership Award 2016"** This award was given under the category of "Leadership Award" by ABP News. The award was presented to Shri Sharad Singh, CEO & Secretary-SMS Lucknow by the Hon. Chief Minister of U.P. Shri Akhilesh Yadav. The Institute's Management Wing has been accredited with **A++** Rating by Business School Ratings of 2016.

SMS Group with its foresighted vision, sense of mission and passion is determined to have its presence felt by opening new campuses across India, so that no matter where a student is, geographical boundaries should not remain hindrance in obtaining the finest of education. With the unwavering determination, passion, hope, effort and vision of so many of behind, the Group will always strive and work relentlessly to touch the new zenith of success with the entire student community in times to come.

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The Institution of Engineers (India)
U.P. State Centre, Lucknow

School of Management Sciences, Lucknow

MNNIT Alumni Association
Lucknow Chapter

One Day National Seminar
on

Sources of Planet Energy, Environmental & Disaster Science : Impact of Glacier Melting & Climate Change (SPEEDS-2022-23) held on

26th March, 2023

Souvenir

Organized by
The Institution of Engineers (India) U.P. State Centre, Lucknow
In
association with
School of Management Sciences, Lucknow
&
MNNIT Alumni Association Lucknow Chapter

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Prof. (Dr.) Bharat Raj Singh

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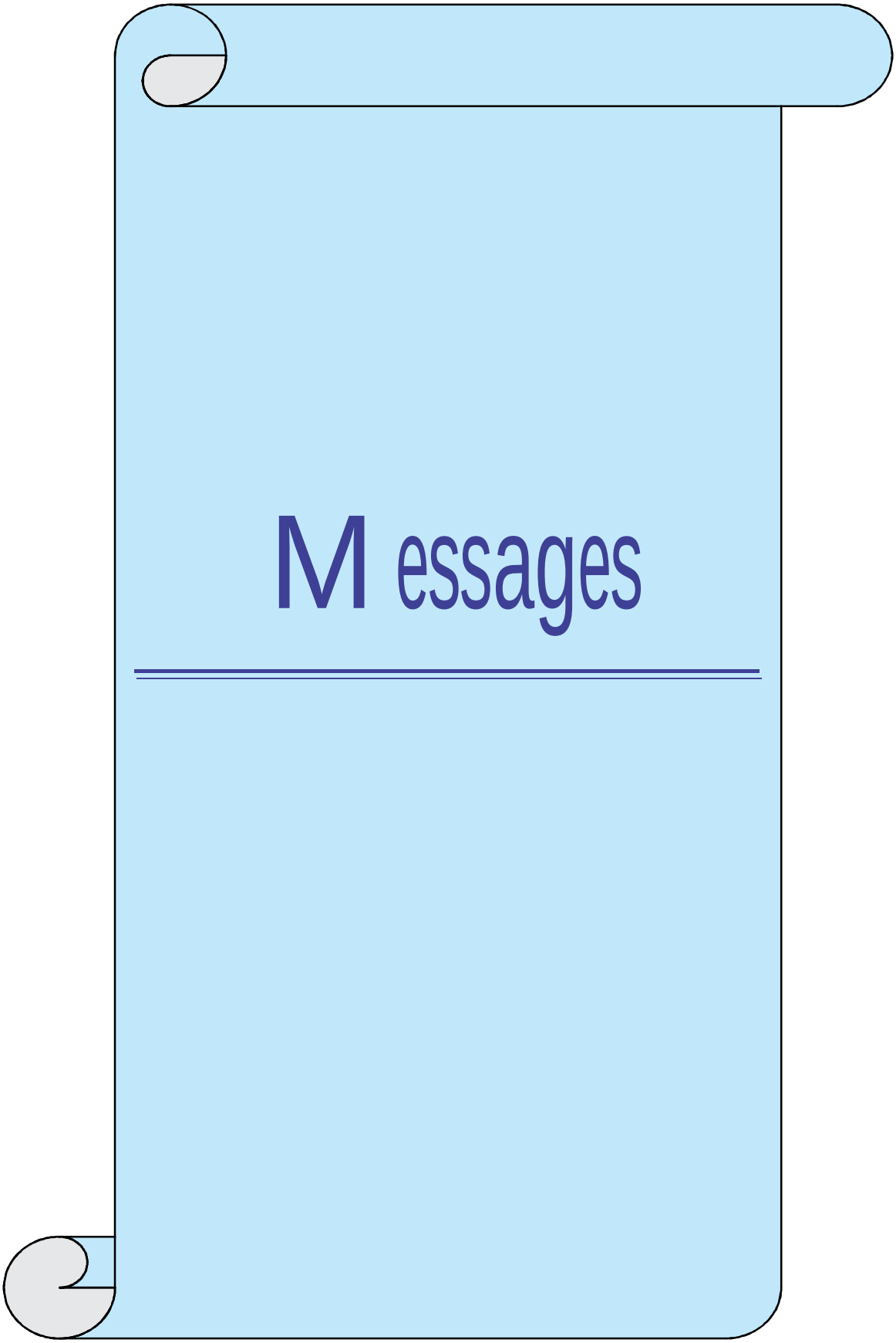
DESIGNED BY
Mr. Amit Kumar

VENUE:
The Institution of Engineers (India)
Uttar Pradesh State Centre, Engineers Bhawan River Bank Colony,
Lucknow-226018


Messages

Anandiben Patel
Governor, Uttar Pradesh

सत्यमेव जयते

Raj Bhavan
Lucknow - 226 027

Message

I am glad to know that School of Management Sciences, Lucknow is organizing One Day Seminar on **"Sources of Planet Energy, Environmental & Disaster Science (SPEEDS-2022-23): Impact of Glacier Melting & Climate Change"** on 26 March, 2023. To mark the occasion a souvenir will also be published.

Climate change is pressing global challenge. It calls for a collective human action and a comprehensive response. The brunt of climate change is always felt severely by the poor. When a natural disaster strikes, they are hit the hardest. Therefore, the need of the hour is to shift focus from climate change to climate justice.

May the deliberations at the Seminar come up with practical suggestions to mitigate the impact of climate change on the society.

Best wishes for success of the Seminar.

Anandi Patel

(Anandiben Patel)

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प्रो० आलोक कुमार राय
कुलपति
Prof. Alok Kumar Rai
Vice Chancellor

डॉ० ए०पी०जे० अब्दुल कलाम प्राविधिक विश्वविद्यालय
उत्तर प्रदेश, लखनऊ
Dr. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY
Uttar Pradesh, Lucknow

Dated: 23.03.2023

Message

I am pleased to know that School of Management Sciences, Lucknow will be organizing a seminar on "**Sources of Planet Energy, Environmental & Disaster Science (SPEEDS)**" on 26th March, 2023.

The aim of this Seminar is to create an opportunity for participants to discuss about the recent researches and innovations in Science, Engineering and Technology. I hope that this conference will provide a common platform for academicians, scientists, and researchers to share their experiences and discuss emerging trends.

I compliment everyone behind this event and wish the Seminar all success.

(Prof. Alok Kumar Rai)
Vice-Chancellor

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Ajay Kumar Sharma
Member Secretary

D.O. Letter No.: 26/MS Camp/2023
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Lucknow-2260 10
Phone: 91-522-2720895
E-mail: ms@uppcb.in

Date: 23.03.2023

MESSAGE

I am indeed happy to learn that the School of management Sciences (SMS), Lucknow is organizing the **One Day National Seminar on " Sources of Planet Energy, Environmental and Disaster Science (SPEEDS-2022-23: Impact of Impacts of Glacier Melting & Climate Change"** scheduled on March 26, 2023 is being organized at The Institution of Engineers (I), UP State Centre, Lucknow, in association with School of Management Sciences, Lucknow & MNNIT Alumni Association Lucknow Chapter, Lucknow.

We are aware that the preservation of earth and environment is highly essential for life. The facts of climate change need our urgent attention and action, especially in India which is a developing country. Now at this time, we need to create awareness among the masses as well as we need to deal with facts of deforestation, increasing temperature, rising sea levels and sinking ground water levels besides other natural calamities which may bring troubles in due courses of time. It is needed to give a deep thought on development not at the cost of nature.

I extend my best wishes on the occasion

(Ajay Kumar Sharma)

Dr. M.P. Singh
Executive Secretary
SMS Group of Institutions

SMS SCHOOL OF MANAGEMENT SCIENCES
VARANASI
Approved by : AICTE, Ministry of HRD, Govt. of India

Dated: 23rd March, 2023

Message

I am extremely happy to learn that School of Management Sciences Lucknow in collaboration with Institution of Engineers (IEI) is organizing one day National Seminar (8th seminar of series) on the theme Sources of Planet Energy, Environmental & Disaster Science: Impact of Glacier Melting and Climate Change, (SPEEDS 2022-23) on 26th March 2023.

The seminar SPEEDS have been the persistent endeavor of School of Management Sciences, Lucknow to address one of the challenging concerns of man today pertaining to the Global warming & Climatic changes. Man's relationship with nature is a determining factor for the prosperity and continuation of future generations. Unfortunately, man's greed and rampant misuse of natural resources is precipitating large scale destruction of natural resources which in turn dissipates our life support system on Earth.

SMS Lucknow has been instrumental, through this platform in igniting the minds of academia, corporate, intelligentsia and the student body, who will inherit the earth, to various challenges of environmental issues. The Seminar also attempts to dwell on the possible solutions which may help in alleviating the various ecological and environmental concerns.

I am sure that the one day's discourse on main theme and sub- themes of SPEEDS 2022-23 will be fruitful in responding to the objectives of the One Day National Seminar at IEI Lucknow.

I compliment the organizing team of SPEEDS 2022-23 for their cohesive endeavor and wish them a great success for the Seminar.

Dr. M.P. Singh
Executive Secretary

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Sharad Singh
Secretary & CEO

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Approved by : AICTE, Ministry of HRD, Govt. of India &
Affiliated to Dr. A.P.J.A.K. Technical University, U.P., Lucknow

Dated: 23rd March, 2023

Message

It gives me great pleasure to state that School of Management Sciences Lucknow in collaboration with Institution of Engineers (IEI) is organizing one day National Seminar on Sources of Planet Energy, Environmental & Disaster Science: Impact of Glacier Melting and Climate Change on 26th March 2023 , (SPEEDS 2022-23) . The Preservation of environment for our continued existence is one of the leading concerns of all right-minded people in the world. Rampant exploitation of natural resources, depletion of forest reserves, plummeting water-tables, the rise of consumerist culture creating non-biodegradable waste, climate change, rising temperatures and many natural disasters are giving a wake-up call to us all to look for ways to abate the frequency of natural disasters. School of Management Sciences, Lucknow has always espoused the cause of environment through its various activities like Seminar SPEEDS, and attempts to create a greater awareness of all the aspects of environmental issues amongst the academicians, industrial fraternity and students. This year the focus of the Seminar is on Impact of Glacier Melting and Climate Change, where an attempt is made to unravel the possibilities of upholding the promise of making India independent in energy generation, in coming years. Seminars are the platforms for generation of new ideas through debate, dialogue and discussions, I am quite sure that this year also we will have some very interesting and innovative ideas being unearthed in SPEEDS 2022-23.

I wish the very best to the organizing team of SPEEDS 2022-23 for their successful conduct of the Seminar.

Sharad Singh
Secretary & CEO
SMS, Lucknow

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The Institution of Engineers (India)

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Er. V.B. SINGH, FIE
National Council Member &
IP VICE PRESIDENT

Email: vbsingh51@gmail.com

MESSAGE

I am happy indeed to learn that the Ins tu on of Engineers (India), UP State Centre & School of Management Sciences, Lucknow are jointly organizing an one day Seminar on 'Sources of Planet Energy, Environment &Disaster Science' (SPEEDS 2022-23) on March 26, 2023. This is the 7th Seminar in the series and this me the Seminar will mainly focus on 'Impact of Glacier Mel ng & Climate Change'. It is true that impact of Glacier Mel ng bring many miseries to mankind including climate change. Hope the Seminar will deliberate in detail on these issues and come out with strategic recommenda ons to limit the damage to environment etc. by Glacier Mel ng due to global warming.

I congratulate Prof. (Dr.) Bharat Raj Singh for his untiring efforts to make this Seminar successful. I also compliment Mr. Sharad Singh, CEO & Secretary, SMS for his whole hearted support for technical ac vi es.

I extend my best wishes for the success of the Seminar on a very relevant & important topic which is going to provide a pla orm for all stake holders to share their views & experiences and come out with definitive recommendations to save our mother earth.

(V. B. Singh)
FIE

The Institution of Engineers (India)

UTTAR PRADESH STATE CENTRE, ENGINEERS BHAWAN, RIVER BANK COLONY, LUCKNOW-226018

दि इन्स्टीट्यूशन ऑफ इंजीनियर्स (इण्डिया)

उत्तर प्रदेश स्टेट सेन्टर, इंजीनियर्स भवन, रिवर बैंक कालोनी, लखनऊ-226018

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Chairman

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(Established 1920, Incorporated by Royal Charter 1935)

"101 Years of Relentless Journey Towards Engineering Advancement for Nation Building"

MESSAGE

I am extremely happy that The Institution of Engineers (India),UP State Centre Lucknow in association with School of Management Science Lucknow is organising an one day seminar on **"Sources of planet energy, Environmental & Disaster Science: Images of Glacier Melting & Climate change (SPEEDS 2022-23)"** on Sunday March 26,2023 at 'ENGINEERS BHAWAN' IE(I), Lucknow.

The entire Globe is facing ill effects of Global warming such as extreme weather conditions, storms, earthquakes etc and I hope this seminar will add another feather to the realm of technological facts under the deliberations of eminent speakers from Engineering and technology, research arena & institutions.

I am confident that this seminar will benefit the students as well as the faculty members and will provide an excellent platform for young engineers.

I extend my best wishes to the participants and organisers for the success of the Event.

(Masarrat Noor Khan)
Chairman

The Institution of Engineers (India)

UTTAR PRADESH STATE CENTRE, ENGINEERS BHAWAN, RIVER BANK COLONY, LUCKNOW-226018

दि इन्स्टीट्यूशन ऑफ इंजीनियर्स (इण्डिया)

उत्तर प्रदेश स्टेट सेन्टर, इंजीनियर्स भवन, रिवर बैंक कालोनी, लखनऊ-226018

Dr. Jaswant Singh, ARS (Retd.), FIE
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(Established 1920, Incorporated by Royal Charter 1935)

"101 Years of Relentless Journey Towards Engineering Advancement for Nation Building"

Ref. No. : UPSC/IEI/

Dated : 24/3/2023

MESSAGE

It is pleasing to learn that the Institution of Engineers (India), UP State Centre; School of Management Sciences, Lucknow & MNNIT Alumni Association Lucknow Chapter are jointly organizing One Day National Seminar on Sources of Planet Energy, Environmental & Disaster Sciences: Impacts of Glacier Melting & Climate Change (SPEEDS 2022-23) on March 26, 2023 at Engineers' Bhawan, The Institution of Engineers (India), UP State Centre, River Bank Colony, Lucknow. The theme and sub themes of the Seminar cover all the important issues, which would create awareness among the students, faculty members and all other stake holders after effective deliberations during different technical sessions. Hope the valuable & sapient recommendations of the Seminar would also be useful for the planners & the society for protecting the environment making the planet earth better place to live at.

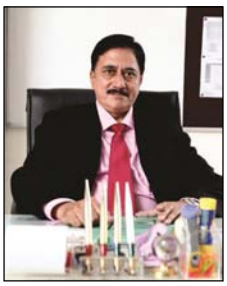
I congratulate the organizers for their untiring efforts to make the Seminar successful.

I wish the Seminar a grand success.

(Dr. Jaswant Singh)
Honorary Secretary

Former PC (Processs Engg.) ICAR-IISR,Head ,Division of Agril.Engg., ICAR-IISR, Principal Scientist,(AS&PE) President (Engg. Sciences Section,ISCA), Vice President (ISAE), Vice President (ASTI), Director Tech. (PFE-ISAE), Member, PRT (ICAR-GOI)
Chairman : ISAE-Lucknow Chapter
Convener : BOS (Agril. Engg) AKTU, LUCKNOW

Prof. (Dr.) Manoj Mehrotra
Director



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Approved by : AICTE, Ministry of HRD, Govt. of India &
Affiliated to Dr. A.P.J.A.K. Technical University, U.P., Lucknow

Dated: 22nd March, 2023

Message

Sources of planet Energy, Environmental & Disaster Science: Impact of Glacier Melting & Climate Change (SPEEDS–2022-23), the eighth seminar in the series being organized by School of Management Sciences, Lucknow. This Seminar is aimed to open up rigorous discussions and debates into the effects of Climate Change that is impacting the entire globe. The future impact as well as what is being witnessed currently due to the glacier meltdown on all forms of living and non-living forms on the earth. What strategies can be adopted by the scientists to reverse or at least contain the debilitating impact for the benefit of future generations? Concern is shown through this Seminar that concrete steps must be taken up by individuals, corporates, societies, and the government to implement an action plan to save our planet from the impact of global warming and climate change.

The intellectual thoughts that are likely to emerge in SPEEDS - 2022-23 will surely bring out meaningful solutions that could be implemented for minimizing the harmful impacts of glacier meltdown and climate change and contribute in the achievement of SDG 13: Climate Action, SDG 14: Life Below Water, and SDG 15: Life on Land. I also thank the Institution of Engineers (India) UP State Chapter for hosting this important event.

I wish the seminar a huge success and hope that all beneficiaries stand to gain from the day long deliberations, on the very important theme, affecting the entire globe.

Prof. (Dr.) M. Mehrotra
Director
SMS, Lucknow

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Prof. (Dr.) Bharat Raj Singh
Director General (Tech.)

SCHOOL OF MANAGEMENT SCIENCES
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Dated: 22nd March, 2023

From the desk of Convener.....

Glaciers act as reservoirs of water that persist through summer. Continual melt of glaciers contributes water to the ecosystem throughout dry months, creating perennial stream habitat and a water source for plants and animals. Do we know--- about 2.1% of all of Earth's water is frozen in glaciers, 97.2% is in the oceans and inland seas, 0.6% is in groundwater and soil moisture and less than 1% is in the Atmosphere Rivers and all living plants and animals. About three-quarters of Earth's freshwater is stored in glaciers Therefore; glacier ice is the second largest reservoir of water on Earth and the largest reservoir freshwater on Earth.

It was warned by many scientists and by me in 2013 that glaciers will vanish from the Iceland and arctic sea within 2- decades and their rapid melting is dangerous to the society and natural systems we rely on. There will be traces of glaciers on the Earth during summer by 2035 and ecosystems will get completely disturbed.

Today, the Arctic is warming twice as fast as anywhere on earth, and the sea ice there s declining by more than 10% every 10 years. As this ice melts, darker patches of ocean start to emerge, eliminating effect that previously cooled the poles, it will create warmer air temperatures and in turn disrupting normal patterns of ocean circulation and more devastating storms and hurricanes around the planet.

As sea ice and glaciers melt and oceans further warm, ocean currents will continue to disrupt weather patterns worldwide. Industries that thrive on vibrant fisheries will be affected as warmer waters change where and when fish spawn. Coastal communities will continue to face billion-dollar disaster recovery bills as flooding becomes more frequent and storms become more intense. People are not the only ones impacted.

The contents of the book chapters of Global warming-2012, Climate Change-2013, acknowledged about the melting of the ice & its consequences due to global warming at and around the North Polar region in the last few decade Excess of firing crackers on festivals and functions-has-lead-to-the- increase in the toxicity of air. Moreover, during rainy and spring season when, the air is loaded with maximum moisture, these water vapors engrossed with toxic substances starts settling causing viscous aura around, where the particulate matter increases up to 485 per cubic meter (of PM 2.5) and 1700 per cubic meter (of PM 10), sometimes this conditions persists for a longer period cause great havoc for life. In the last years, especially during the winter season, the air around us, has got polluted with (pm-2.5) 485-536 per cubic meter which is 8 to 9 times than normal. This has lead to people getting prone to diseases like- Cancer, Cardiovascular, Kidney etc.

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The chemically composed smoke from the factories and ejected Carbon-Monoxide from the exhaust pipes of the vehicles are significant contributors to augment the Green House effect by making the air particles to be loaded with poisonous substances at a height of 10 to 20 kms from the earth's surface. These air particles when a gel with water vapors stays for longer time, thus spoils the air quality index (AQI) of any region. Ozone layer is also getting thinner rather holes are formed and creating heath and many other issues.

In the last two years, Smog enveloped almost every major and minor cities of India especially those of Lucknow, Delhi, Mumbai etc.,- needless to state that people faced difficulty in breathing. Middle aged, septuagenarians and children were the ones who became major victims of smog. The condition worsened during the Diwali, when the Air Quality Index (AQI) of these cities worsened. Unless we think meticulously about bring down pollution level under control-if not under complete control-we cannot make this planet a natural habitat for our living.

We have to act upon to fight with the dire consequences of the fast shrinkage of Arctic sea, Glaciers ice melt, which I personally believe by my own studies published in the InTech book of Global Warming –I, II and Climate Change under umbrella of SMS-CV Raman Centre for Research & Innovation, gave birth of: **Sources of Planet Energy, Environmental & Disaster Science (SPEEDS)** & this year theme is **Impact of Glacier Melting & Climate Change**

Sub Themes:

- Glacier Melting on Arctic Sea
- Glacier Melting on Antartica
- Glacier Melting on Himalayas
- Global Warming
- Climate Change
- Disaster Management
- Waste Management
- Renewable Energy
- Others (related to climate and disaster)

Happening by 2020 or 2030 is not unrealistic while most of the ocean basin will remain ice free through the summer from the North America map. By 2040 only a small amount of sea ice will remain along the north coasts of Greenland, USA and Canada. The northern region of USA & UK may get affected with cold waves, disasters, intense storms, heavy snow falls and life may not be conducive at all. Such cold waves, extreme temperature drop may force **North Americans and Europeans** to find new places for their living.

The National Seminar on **Sources of Planet Energy, Environmental and Disaster Science**: Impact of Glacier Melting & Climate Change **(SPEEDS-2022-23)** on 26 March, 2023 will definitely provide sustainable solutions by the academicians, industrialist, researchers and students at the forum to reduce global warming and glacier melting while making use of renewable energy such as: solar, wind, geothermal, biogas etc and to maintain the energy sustainability and having advanced science to deal with disaster management.

We have already launched global awareness campaign since 2013, as to "**How to help to stop Climate Change**", with slogan, "**Save Earth & Save Life**". A question posing threat to our survival still needs justification about '**What would happen if earth's spinning angle gets shifted from 22.430 in the coming century,"** while earth speed is slowing down.

Last but not the least, I express my sincere wishes for the grand success of this National Seminar.

Let us join hands to "Save Earth & Save Life".

Jai Hind...Jai Bharat!!!

Prof. (Dr.) Bharat Raj Singh
Convener-2022-23 &
Director General (Tech.)

Dr. Dharmendra Singh
Associate Director

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Affiliated to Dr. A.P.J.A.K. Technical University, U.P., Lucknow

Dated: 25th March, 2023

It is a matter of great pleasure and honour to me writing this message being an integral part of School of Management Sciences, Lucknow. SMS Lucknow in collaboration with Institution of Engineers (IEI) is organizing 8th One day National Seminar on "Sources of Planer Energy, Environmental and Disaster Science: Glacier Melting and Climate Change" (SPEEDS 2022) on 26th March 2023. The theme of seminar is the demand of present day situation where sustainability of life on earth demands much of researcher's attention.

Unless the environment and ecology are preserved and safeguarded, the natural disasters will be unavoidable. Renewable Energy resources are our biggest strength and savior. But need of the hour is to develop methods and technologies to exploit them for a sustainable development.

We are ensuring that all the essential aspects discussed above will be addressed by the eminent speakers in this seminar. The faculty and students will certainly benefit from it.
I wish the seminar and members of Organizing committee, a huge success.

Dr. Dharmendra Singh
Associate Director
SMS, Lucknow

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One Day National Seminar

on

Sources of Planet Energy, Environmental & Disaster Science :

Impact of Glacier Melting & Climate Change

(SPEEDS-2022-23)

26th March, 2023

School of Management Sciences, Lucknow

Chief Patron

Prof. Alok Kumar Rai

Hon'ble Vice Chancellor

Dr. A.P.J. Abdul Kalam Technical University, U.P. Lucknow

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Dr. M.P. Singh

Executive Secretary

Shri Sharad Singh

Secretary & CEO

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Prof. (Dr.) Bharat Raj Singh

Seminar Coordinator

Prof. (Dr.) Dharmendra Singh

Seminar-Convener

Prof. (Dr.) Bharat Raj Singh

Seminar- Co-Convener

Prof. (Dr.) Pramod Kumar Singh

Seminar Co-Coordinator

Dr. Ved Kumar

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Mr. Anoop Kumar Singh, Assistant Prof., SMS Lucknow

Dr. Ved Kumar, Assistant Professor, SMS Lucknow

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Programme Schedule

SPEEDS-2023

26th March, 2023

Inaugural Session

(March 26, 2023)

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10:35 A.M.	Welcome Address by Prof. (Dr.) Manoj Mehrotra, Seminar Chair & Director, SMS, Lucknow
10:45 A.M.	Address by Er. R. K. Trivedi, Imm. & Past Chairman, The Institution of Engineers (India), UP State Centre Lucknow
10:50 A.M.	Theme of Seminar by Prof. (Dr.) Bharat Raj Singh, Seminar Co-Chair & Convener
11:00 A.M.	Keynote Address by Dr. P.K. Bharti, HOD-ME, Integral University, Lucknow
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11:40 A.M.	Address by Chief Guest : Shri Ajay Kumar Sharma, Secretary Member, Uttar Pradesh Pollution Control Board, Lucknow.
12:05 P.M.	Distribution of Memento to Dignitaries
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01:30 P.M.	Lunch
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03:00 P.M.	Technical Session-(II)

Valedictory Session

(March 26, 2022)

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04:45 P.M.	Address by Chief Guest Dr. Usha Bajpai , Former Professor, Centre of Excellence, Renewable Energy & Research University of Lucknow.
05:00 P.M.	Presentation of Mementos & Distribution of Certificates
05:10 P.M.	Vote of Thanks Prof. Ashok Kumar Tiwari, General Secretary, MAA, Lucknow
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1.2	12:23	Environment Conscious Habitat Development	Suresh Chand Bajpai
1.3	12:31	Impacts of Climate Change and Himalayan Melting Glaciers on Human System	Laxmi Kumari
1.4	12:39	Melting of Himalayan Glacier Causing Climate Damage and Hitting India with Heavy Snow falls, Cold Wave, Cyclone and Crack in Hills	Bharat Raj Singh & Manoj Mehrotra
1.5	12:47	Corporate Social Responsibility Away to ….	Dr. Priyank Sharma
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1.7	01:03	Role of Renewable energy in Climate Change on Human Systems	Ved Kumar
1.8	01:11	Analysis of Physico-Chemical Characteristics of Water Quality Discharged from CETP, Banthra, Unnao	Sanjeev Kumar Pandey
1.9	01:20	A Study on Solid Waste Management Systems in Lucknow	Syed Shuja Askari
Technical Session –II Time 3:00- 4:30			
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2.2	3:07	Design of Roof-top Solar PV System for Site feasibility Assessment using Helioscope	Vivek Mishra
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2.4	3:21	Optimized Solar Photovoltaic Generation in a Real Local Distribution Network	Pramod Kumar
2.5	3:28	A Review on Solar Hybrid (PV+CSP) Trading System of India to other Countries	Garima Singh
2.6	3:35	Quantum Dots for Solar Cell	Samreen
2.7	3:42	Study on computational and thermal behavior of poly (ethylene glycol) butyl ether solution	Sudhaker Dixit
2.8	3:49	3-D Conduction heat transfer analysis in different coordinate system	Anoop Kr. Singh
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KEYNOTE SPEAKERS/ SPECIAL INVITEE

1. Solar Power Prospects in India Due to Climate Change: A Review
2. Restoring Smaller Rivers in Uttar Pradesh: Role of River Zoning and Catchment Planning

Solar Power Prospects in India Due to Climate Change: A Review

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ABSTRACT

As per the Paris Climate Agreement, from 2015, nearly all nations agreed to reduce the emission of Greenhouse gases, therefore there is a constantly growing market for Solar-, Wind-, and other renewable Energy plants. One of the most easily installed Powerplant is the Solar power plant which by now is found on the whole globe. It makes it possible to use the free Energy which is provided by the Sun every day and every month of the Year. This makes it not only one of the most important Technologies to fight the Climate Change, but also a very popular Technology, which comes with a growing market and at new workplaces. It is very important in terms of climate change, reducing CO2 emissions and creating more social justice. Especially India with its fast-growing population and huge number of human resources can make good use of solar power since the country not only lies close to the equator, which increases the solar production, but also because the country is big and has lots of space which cannot be used for agricultural purposes. Therefore, it is no issue to build big solar plant to provide the country with clean Energy. But not only big plants installed by companies in the desserts help reduce CO2 emissions, but also small local plants or even only modules which are used instead of a diesel generator help the Environment. As a country with the large emissions worldwide, India has a responsibility towards the world to reduce emissions to fight the climate crisis. The Indian government has already acted in this regard and started several schemes to promote the use and construction of solar panels. Currently there are ten different schemes suitable for all sorts of constructions projects. It is possible for all people to get solar installation on the roof of their company or private home.

Attention must be provided on the System design, Performance Evaluation, and Techno-economic aspects. The use of solar plants not only saved millions of rupees, but also tons of CO_2.

Keywords: Renewable Energy plants, Climate Change, Environment, CO_2 emissions

Restoring Smaller Rivers in Uttar Pradesh: Role of River Zoning and Catchment Planning

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ABSTRACT

High-quality supply of drinking water is essential for maintaining good health and environment. The quality of water-supply infrastructure symbolizes the progress and prosperity of a nation. Increasing population overburden and unpredictable climate change on earth is making drinking water resources scarce, and consequently, large parts of tropics and sub-tropics are affected adversely. For making pathogen/toxic chemical-free drinking water available, low-cost sustainable approach for water purification is essential, especially in the impoverished regions of the tropics and sub-tropics, where the sunlight is abundant. In order to provide solution for this crisis of drinking water shortage, our Q.dot-PurE-WatER project focuses on exploiting quantum(Q)-dot rare-earth(RE)-ion-doped glass from waste phosphor lamps for re-engineering solar-energy harvesting water evaporator and filtration system, called the solar-still, as demo. In a demo solar-still, the Q-dot paint layer will be applied for enhancing black-body absorption for heating water above 95oC for killing pathogens. The solar-still will also store energy by utilizing the organic lauric acid phase change mixture for using heat after sunset. The evaporated water will be filtered through photo-sensitized nano filter for destroying vapour-transported pathogens and chemicals. No similar work has been reported in India so far.

The main advantage of utilizing phase change mixture (PCM) or material in a solar still is to store energy in the PCM during the day time while water remains heated and store energy by reducing the heat loss to the surrounding. For efficient PCM storage, the rate of heat absorption and storage needs to be larger via radiation and conduction via Q-dot coated layer into the PCM storage system, which will be characterized by modelling using MATLAB and ANSYS software. The model and measurements approaches will also enable us to understand the concept of thermo-mechanical engine for ultimately determining the available energy for mechanical work.

Keywords: Quantum(Q)-dot pure water, Quantum(Q)-dot rare earth- ion- doped glass.

ABSTRACT

1. Glacier Melting on Arctic Sea
2. Glacier Melting on Antartica
3. Glacier Melting on Himalayas
4. Global Warming
5. Climate Change
6. Disaster Management
7. Waste Management
8. Renewable Energy
9. Others (related to climate and disaster)

1. GLACIER MELTING ON ARCTIC SEA
2. GLACIER MELTING ON ANTARTICA
3. GLACIER MELTING ON HIMALAYAS

- The Rapid Melting of Arctic Ice Become a Major Cause of Cyclonic Snowfall in USA
- Melting of Himalayan Glacier Causing Climate Damage and Hitting India with Heavy Snow falls, Cold Wave, Cyclone and Crack in Hills
- The State of Melting Glaciers of Himalayan and Change Environment
- Impacts of Climate Change and Himalayan Melting Glaciers on Human Systems

The Rapid Melting of Arctic Ice Become a Major Cause of Cyclonic Snowfall in USA

Bharat Raj Singh

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ABSTRACT

The massive US winter storm has left millions without power since last Friday, December 22, 2022, and canceled all their vacation plans. Power outages darkened more than 1.4 million homes and businesses, while thousands of US flights were cancelled. This fierce winter storm, called Elliot by forecasters, intensified into a bomb cyclone near the Great Lakes on Friday, December 22, 2022, bringing high winds and blizzards from the northern plains to western and upstate of New York. It has become serious cause of killing in the form of floods, flash-freezing and travel intrusions it took a terrible toll. This led to the cancellation of over 5,700 flights by airlines, leaving thousands of passengers stranded at airports. Icy weather or accidents disrupted travel on roads, and officials in parts of Indiana, Michigan, New York and Ohio urged motorists to avoid unnecessary travel. Transportation Secretary informed that the US aviation system is "operating under enormous pressure". On December 21, 2022 alone, about 10% of US flights were canceled. The devastating effect of the storm spread over a width of 3,200 km, which means heavy snowfall from Texas to Maine and a drop in temperature from (-) 45 to (-60) 60 degree centigrade, making life miserable for the people. Authorities ordered cars off the roads as US forecasters warned of "extreme impacts" from the potentially cyclonic blizzard in central and eastern parts of the country.

This paper evaluates the reasons for such devastating climatic conditions and what kind precautions people has to take in future.

Keywords: Melting of Arctic, winter storm, terrible toll, flash-freezing, snowfall.

Melting of Himalayan Glacier Causing Climate Damage and Hitting India with Heavy Snow falls, Cold Wave, Cyclone and Crack in Hills

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ABSTRACT

India, surrounded by sea on three sides and Himalayan Mountains on the fourth side, can also be badly affected by heavy cold wave, destructive and high speed storms. Snow falls near the Himalayan glacier region; there can be huge loss of livelihood. It is expected that the situation will continue to worsen every year for the next decade. Hills and icy rocks will keep breaking and falling into the creeks; due to this, the people living in the hilly areas will have to be displaced elsewhere. Snow falling on the hills of the Himalayas in winter due to the winds of Western Disturbance in the plains, from Delhi to Uttar Pradesh, Madhya Pradesh and Bihar has come under the grip of severe cold wave. This has broken all its old records. Schools and colleges are closed. Business is also being affected heavily.

Keywords : Glacier, Snowfall, Cyclone.

The State of Melting Glaciers of Himalayan and Change Environment

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ABSTRACT

Numerous studies were carried out during 2021-2022 lend credence to the link between climate change and glacier melting. Since industrialization and human activities is advancing the concentration of greenhouse gases in the atmosphere is steadily increasing. As a result of green house gas effect the world's average surface temperature has increased between 0.3 and 0.6°C over the past hundred years. There is expectation of global average temperature increase by 1.4 to 5.8°Cin 2100 with the increase of carbon dioxide. The increase in average temperature will have the direct impact on glaciers and glacial lakes in Hindu Kush-Himalayan (HKH) region. The glaciers of the HKH region are retreating and as a result the glacial lakes associated with the glaciers are increasing in number and size to the level of potential glacial lake outburst flood GLOF. Many GLOFs are recorded in region at least one in 3 to 10 years since 1970s. The GLOF events have trans-boundary effect resulting loss of many lives and property along the downstream. The International Centre for Integrated Mountain Development (ICIMOD) with its partner institutes mapped about 15,000 glaciers, 9000 lakes and 200 potentially dangerous glacial lakes including 21 GLOF events in the Himalayan region except Arunanchal and Azad Jammu & Kashmir (AJK) region. The database of glaciers, glacial lakes, and glacial lake outburst flood in HKH region serves as the baseline data and information for climate change study, planning for water resource development, to understand and mitigate GLOF associated hazards, thus linking science to policy. However with the view of catastrophic events of GLOF in the past monitoring, mitigation and awareness of potential GLOF in the region is necessary to reduce the GLOF hazard. This review paper describes the industrialization and human activities and effect of greenhouse gases on climate change.

Keywords: Human activities, Industrialization, Temperature, Eco-system, Polluting.

Impacts of Climate Change and Himalayan Melting Glaciers on Human Systems

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ABSTRACT

Temperatures in India have risen by 0.7 °C (1.3 °F) between 1901 and 2022, thereby changing the climate in India. In 2022-23 severe heat wave was recorded in Asian country, including India. The temperature reached 51 °C. Climate change makes such heat waves 100 times more likely. The effect of this is falling on the Himalayan glacier, and the glacier is melting. Climate change, with its adverse effects has reached our doorsteps. It is high time that humans act wisely to cope with the changes and take precautions to avoid disasters in the future and save the environment and Himalayan glaciers. Climate change is threatening India's food security with frequent dry spells, heat waves and erratic monsoonal rainfall worsening the farmer's distress. Thus feeding more people more sustainably has become more critical than ever. In this context, India needs to take concrete steps to reduce the impact of global warming. Glaciers have been retreating for over 100 years worldwide, with few exceptions. In international climate observation systems, they are often called unique demonstration objects of climate change. Everybody can see the change and understand that ice melts when it gets warming.

Keywords: Climate Change, Glaciers, Temperature, Greenhouse gases, Human system

4. GLOBAL WARMING
5. CLIMATE CHANGE
6. DISASTER MANAGEMENT
7. WASTE MANAGEMENT

- Role of Renewable Energy in Climate Change on Human Systems
- A Study on Solid Waste Management Systems in Lucknow
- Transforming Land Usage by Agricultural Engineering – A Study of Saudi Arabia
- Analysis of Physico-Chemical Characteristics of Water Quality Discharged from CETP, Banthra, Unnao
- Corporate Social Responsibilities - A Way To Trim Down Environmental Disaster

Role of Renewable Energy in Climate Change on Human Systems

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ABSTRACT

Biodiesel production has received considerable attention in the recent past as biodegradable and non-polluting fuel. Substituting petro-diesel with biodiesel may reduce air emission, increase the domestic supply of fuel, and create new market for agriculture. An alternative approach would be one focus on multi-purpose; short-duration annual crops that can either simultaneously yield fuel along with food/fodder or can be cultivated in rotation with food crops, so that there are a lot of opportunities for small formers. The central policy of biodiesel concerns for creation and protection of environment. The economic benefits include support to the agriculture sector tremendous employment opportunities in plantation and processing. Biodiesel fuel plays an important role for the replacement of petro-diesel to eco-friendly fuel. Various studies showed that pollutants like CO, CO_2, SO_X, HC, PAH, PM etc can be reduced by using blended and pure biodiesel. NO_X emissions are increased by using biodiesel. Biodiesel is an environment friendly biofuel since it provide a means to recycle of CO_2; biodiesel does not contribute global warming. Biodiesel is produced from various plant oils like Jatropha oil, Cottonseed oil, Pongania oil, Palm oils, Rapeseed oil, Castor oil and sorghum oil converted to biodiesel through the process of transesterification. This study is initiated to investigate the potential of jatropha oil as source of biodiesel. This review paper describes the production of biofuel, its properties, agricultural benefits, eco-friendly, recycle of CO_2 and reduce greenhouse gases future potential of biodiesel.

Keywords- Renewable Energy, Agriculture benefit, Sorghum, Jatropha, Transesterification, Eco-friendly

A Study on Solid Waste Management Systems in Lucknow

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ABSTRACT

In developing countries, rapid urbanization and population growth have led to an increase in Municipal Solid Waste (MSW) generation, presenting major challenges for Indian cities. Safe collection, transportation, and treatment of MSW are crucial to public health, environmental sustainability, and climate change mitigation. Unfortunately, a very small proportion of MSW is treated in India, with the rest disposed of in unsanitary landfill sites without recycling or treatment technologies. This paper presents a review of the existing MSW management practices, challenges, and recommendations for improving MSW management in the city of Lucknow, Uttar Pradesh, India.

Despite being a major city and capital of Uttar Pradesh, there is a lack of detailed studies that review the waste management strategies in Lucknow and identify the key challenges. The study reveals that the major challenges for MSW management in Lucknow include uncontrolled landfilling, insufficient public participation, and inadequate implementation of MSW legislation and waste conversion.

To address these challenges, the study recommends public awareness campaigns, public- private partnerships, investment in lined landfills, recycling, and waste-to-energy techniques. Optimization models and life cycle assessment tools should be used to minimize the cost and environmental impact of MSW management.

The findings of this study can guide policy makers and private sector stakeholders in developing effective strategies for future planning, investment, and execution of improved MSW management in Indian cities. It is essential to prioritize sustainable and innovative MSW management practices to reduce negative impacts on public health, environment, and climate change in rapidly developing cities like Lucknow.

Keywords: Developing cities, Landfilling, Municipal Solid Waste.

Transforming Land Usage by Agricultural Engineering – A Study of Saudi Arabia

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ABSTRACT

Saudi Arabia is 5th largest country in Asia. 95% of country is covered by sand and infertile land. It is one of six countries having no permanent river and average rainfall is 4 inches annually. Six decades before the country was depends on other country to fulfil its demand of food, vegetable and dairy items. Since then, government was initiated new economic policy for agricultural development. It provide fund for research and development in the field of agriculture engineering which developed innovative idea to produce food from desert. In 1990, the country was one of the largest producer of Wheat in the world. This paper based on descriptive research on secondary data to study agricultural project in Saudi Arabia in last 60 years. Analysis of data is by using graphical representation.

Keyword :Economic Policy, Agricultural Engineering.

Analysis of Physico-Chemical Characteristics of Water Quality Discharged from CETP, Banthra, Unnao

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ABSTRACT

In developIn this research work my plan has been to study the analysis of physico-chemical characteristics of Water Quality Discharged from CETP, Banthar, Unnao. Total 8 water quality parameters such as- (i) Avg. Flow/Day, (ii) Avg. pH of the day at final, (iii) D.O. (CAT), (iv) D.O. (EAT), (v) COD Final outlet, (vi) BOD Final outlet, (vii) SS(mg/L), & (viii) Chromium (Raw & Final) have been studied related to water quality discharged from CETP, Banthar, Unnao.

This report has been prepared to study the quality of water discharged from Common Effluent Treatment Plant (CETP), Banthar, Unnao. The water received from different tanneries collected at CETP, Banthar, Unnao for treatment. Various unit operations- Barscreen, grit chamber, equalization tank, flash mixer (lime alum), clariflocculator, 1st stage aeration tank (CAT) & 2nd stage aeration tank (EAT) are involved in the treatment of tannery effluent. The main aim of this study is to use of this treated water for agricultural purpose.

Keywords: Water quality, Water quality parameters, Avg. Flow/Day, pH, DO, COD, BOD, SS, Chromium, Effluent, tanneries & CETP.

Corporate Social Responsibilities - A Way To Trim Down Environmental Disaster

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ABSTRACT

This research article is an attempt to identify and accumulate the various types of environmental friendly CSR activities at one place. Now the days companies try to create the goodwill in the eyes of society and their target customers by focusing on the corporate social responsibilities to connect themselves with society and to be an ongoing concern. The organizations can be a Sustainable only if they are able to maintain and preserve the natural environment in which they are operating but their greed to earn more and more profits leads to the over utilization of the scarce resources but accumulations of profits and greed leads to the deterioration of the environment, so if the firms want to a sustainable one so they have to leave their greed. By accepting this concept So many companies follow the socially responsible practices towards the nature by reducing carbon foot prints or by reducing the wastage of water and paper to preserve the natural resources for the upcoming generations .

Key words: Sustainable, Environmental Disaster, Corporate social responsibility.

Design of a Movable Solar Panel on a Waste Bin

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ABSTRACT

Solar panel is device for conversion of sun's radiant energy into electric energy by the help of photovoltaic cells. But As the position of sun rays change according to time solar panel receives less radiant energy, if it is static. So it is necessary to keep changing the positioning of solar panel in fixed intervals of time. This problem can be solved by designing of movable Solar panel fixed on a Waste bin which comprises of a Waste bin , base stand with wheels and battery stand fitted in it. This Setup can be placed around any poles in public places like parks and Setup is fixed to pole in such a way that it can rotate about pole at 360^0 angle.

For this a complete Design of Solar panel on a Waste Bin along with its base Stand , battery stand and Wheels is Designed in this paper with Software SOLID WORKS thus whole set up can be manufactured very smoothly with help of a systematic design which can be simulated to any prototype of any shape and setup of Solar Panel can be manufactured according to the load and demand of energy. This Design can be useful for dual purpose of waste management and small purposes like park light, Night lamp, Mobile charging , pumps, Motor Start ups Street lights, LED lamps at public places.

Keywords: Solar Panel, Photovoltaic Cell ,Waste bin, Solid works Software, Base Stand, Wheels, Battery Stand.

8. RENEWABLE ENERGY

- Floating Photovoltaic (FPV) Panels in India- Challenges and Opportunities
- A Review on Solar Hybrid (PV+CSP) Trading System of India to other Countries
- Renewable Energy the Clean Facts
- Optimized Solar Photovoltaic Generation in a Real Local Distribution Network
- Design of Roof-Top Solar PV System for Site Feasibility Assessment Using Helioscope
- Quantum Dots for Solar Cell

Floating Photovoltaic (FPV) Panels in India-Challenges and Opportunities

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ABSTRACT

Floating photovoltaic (FPV) plants present several advantages in comparison with ground-mounted photovoltaic (PVs) and could have major positive environmental and technical impacts. FPVs do not occupy habitable and productive areas and can be deployed in degraded environments and reduce land-use conflicts. They also have higher efficiency than ground-mounted PV solar and are compatible with the existing hydropower infrastructures, which supports diversifying the energy supply and its resilience. Despite the growth of FPVs on an international scale, lack of supporting policies and development roadmaps by the governments could hinder FPVs' sustainable growth. Long-term reliability of the floating structures is also one of the existing concerns that if not answered could limit the expansion of this emerging technology. For an ecosystem to function, its structure should be left intact. Spatial extent of the solar panels can alter the amount of sunlight entering the system. This can interfere with various levels of food chain and biogeochemical cycles (water cycle, carbon cycle, nitrogen cycle) of the aquatic ecosystem.

In this paper, it has been shown that the aquatic ecosystem proliferates under optimum temperature and presence of solar panels on the surface can alter the temperature profile. This will trigger a chain of reactions leading to various adverse impacts on the ecosystem. With less sunlight available, photosynthetic activities inside the water decreases. Dying plants further impact aquatic fauna that feed upon the plants and on the herbivorous (animals). While on one hand, lack of food leads to the loss of aquatic life, decomposition of this organic matter leads to increase in temperature, thereby depleting the dissolved oxygen (DO). Loss of aquatic fauna also impacts migratory as well as resident birds feeding habitat. This paper also emphasis the technological challenges and other issues which cannot be neglected if Floating photovoltaic (FPV) plants are installed.

Keywords: Floating photovoltaic (FPV), Biogeochemical cycles, Aquatic Ecosystem, Dissolved oxygen (DO).

A Review on Solar Hybrid (PV+CSP) Trading System of India to other Countries

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ABSTRACT

Solar power is the key to a clean energy future. Solar power is the conversion of energy from sunlight into electricity, either directly using photovoltaic (PV), indirectly using concentrated solar power, or a hybridization of PV and CSP. This research paper summarizes the geographical area, average DNI, power consumption and solar power production of countries like Morocco, South Africa, Italy, Saudi Arabia etc. including India.

The aim of this research paper is to show that India' solar energy market is growing day by day in comparison to other countries and in near future India's solar suppliers tap down this solar energy and provide this solar energy to international grid for their usage. Carbon free is also possible with solar energy.

Keywords: Photovoltaic, Solar Hybrid, PV and CSP, Concentrated Solar Thermal.

Renewable Energy the Clean Facts

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ABSTRACT

Renewable energy resources are sustainable, a few are not. as an instance, a few biomass sources are taken into consideration unsustainable at modern charges of exploitation. Renewable energy is regularly used for electricity era, heating and cooling. Renewable electricity projects are usually huge-scale, however they may be additionally acceptable to rural and remote regions and growing international locations, where energy is frequently critical in human improvement. Renewable electricity is often deployed collectively with in addition electrification, which has several advantages: electricity can circulate heat or objects effectively, and is easy at the factor of consumption. Further, electrification with renewable electricity is greener and therefore results in tremendous reductions in primary strength necessities.

From 2011 to 2021, renewable power has grown from 20% to 28% of world power supply. Use of fossil electricity shrank from 68% to 62%, and nuclear from 12% to 10%. the share of hydropower reduced from 16% to 15% at the same time as electricity from sun and wind increased from 2% to 10%. Biomass and geothermal power grew from 2% to 3%. There are 3,146 gigawatts hooked up in one hundred thirty five nations, while 156 countries have legal guidelines regulating the renewable electricity area. In 2021, China accounted for nearly half of the global growth in renewable strength.

Keywords: Renewable energy, Biomass sources, Geothermal power, Biomass.

Optimized Solar Photovoltaic Generation in a Real Local Distribution Network

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ABSTRACT

The present paper reports the remarkable penetration of renewable energy in electric networks, despite its valuable opportunities, such as power loss reduction and load ability improvements, has raised concerns for system operators. The study reports the hedge penetration can lead to a violation of the grid requirements, such as voltage and current limits and reverse power flow. Also the study refers the optimal placement and sizing of Distributed Generation (DG) are one of the best ways to strengthen the efficiency of the power systems. The simulation method is used to study and modeling for the local distribution network based on obtained load profiles, GIS information, solar Isolation, feeder and voltage settings, and defines the optimization problem of solar PVDG installation to determine the optimal siting and sizing for different penetration levels with different objective functions. The key objective of the study includes voltage profile improvement and energy loss minimization and the considered constraints include the physical distribution network constraints (AC power flow), the PV capacity constraint, and the voltage and reverse power flow constraints.

Keyword – PV distributed generation, optimal allocation, loss reduction, voltage improvement.

Design of Roof-Top Solar PV System for Site Feasibility Assessment Using Helioscope

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ABSTRACT

Assessing the site feasibility aspects of the residential solar photovoltaic (PV) rooftop electricity generation system through Helioscope simulation tool for my independent house for self- consumption and excess electricity fed to grid, thereby reducing bill. This paper aims to address site feasibility assessment for solar rooftop on what parameters from sun radiation data to power generation for home solar rooftop and grid connectivity. Based on design investigation of survey and data collected were suitable for set up for rooftop project at the capacity of 3.6 kwp. The results of this analysis offer insights into the perceptions and motivations influencing the growth of solar rooftop under JNNSM phase-I to increase the renewable sources-based energy capacity to 175 GW by 2022, in which 40 GW set up for solar PV rooftop with strong commitment. The purpose is to convert my home into clean green energy by utilizing roof top solar power plant, which is an excellent move towards sustainable energy conservation and will contribute to the progress of our nation.

Finally, installing a rooftop solar system for a household in which important issue is costing, total cost of the installation, amount of electricity generated as well as the government's policies should support the development of solar energy to promote the renewable energy which would further make replacement of conventional energy and avoid the dependency on fossil-fuel based energy to make India clean green energy.

Keywords: Helioscope simulation, Solar photovoltaic, Renewable energy, Conventional energy

Quantum Dots for Solar Cell

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ABSTRACT

The importance of solar energy has been realized a long time back. In this direction, efforts were invested to prepare an efficient solar cell which can convert energy which we are getting for free from the sun to some useful form that can be readily utilized for daily purposes. However, the efficiency of the solar cell was extremely low and moreover, the size of the solar cell was quite large. Recently, quantum dots are used as the main photovoltaic absorbing material to replace conventional solar cell materials. Quantum dot (QD) solar cells are capable of achieving the maximum possible thermodynamic conversion efficiency of the energy from the sun. In the present work, we shall focus on the two-dimensional quantum dots utilized recently for solar cell application. We shall discuss the synthesis methods, construction, working and benefits of using two-dimensional materials for the quantum dots solar cells.

Keywords: Solar energy, photovoltaic, thermodynamic, quantum dot.

9. OTHERS (RELATED TO CLIMATE AND DISASTER)

- Theoretical Investigation of Geometry Optimization Vibration Analysis Thermo-dynamical Properties Electronic Properties of Hexachlorophosphazene: A DFT Study
- Fuzzy Logic System through Monitoring and Control of Blood Pressure
- IoT Based Internet Security and Home Computerization System
- 3-D Conduction Heat Transfer Analysis in Different Coordinate System
- Development of A New Class of Natural Fiber Composite Material Using Human Hair and Coir Fibers
- Path Optimisation In Mobile Adhoc Network Using Nemo
- Study on Computational and Thermal Behavior of PEGBE Solution
- E-commerce Web Application Using Mern Technology
- Green Synthesis of Titania and Titania-Silver Nanoparticle from Novel Plant Extract of Origanum Majorana
- Wireless Sensors for Internet of Things (IOT)

Theoretical Investigation of Geometry Optimization Vibration Analysis Thermo-dynamical Properties Electronic Properties of Hexachlorophosphazene: A DFT Study

Vijay Narayan Mishra[a], D.V Shukla[b], Ankit Kumar Sharma[c], Ashutosh Kumar Singh[d], Vinod Kumar Singh[e], Shubham Tiwari[c], Anoop Kumar Pandey*[c]

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ABSTRACT

In present communication geometry optimization of Hexachlorophosphazene has been carried out by combination of DFT/B3LYP method and 6-311G(d,p) basis set. The vibrational analysis of Hexachlorophosphazene is calculated on its optimized geometry. The assignment of vibrational modes frequencies and its intensities are calculated by using same level theory. The electronic properties of title molecule has been discussed by using several chemical reactivity parameters. The nature and reactivity sites are calculated by using HOMO LUMO MESP plot. The electronic transition in title molecule has been calculated by time dependent theory (TDDFT) on same level theory. The thermodynamical parameters are calculated on variation of temperature (100K-600K).

Keywords: DFT, HOMO, LUMO, TDDFT.

Fuzzy Logic System through Monitoring and Control of Blood Pressure

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ABSTRACT

In this paper, design and development of a fuzzy logic controller is done for the control of Mean Arterial Pressure (MAP) of a patient during anesthesia. The main purpose of the paper is to constitute a basis for further real time applications. In the simulation studies, the patient is represented with a linear mathematical model that includes time delay elements. The parameters of the fuzzy controller are tuned in order to obtain a robust control performance against the plant parameter variations. Since the modern control is usually realized by using a microprocessor, the discrete time analysis and design of the control system are given in the paper. The simulation results showing the robust control performance of the proposed fuzzy controller under the plant parameter variations are presented.

Keywords-: Fuzzy logic, control, mean arterial pressure (MAP), depth of anesthesia.

IoT Based Internet Security and Home Computerization System

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ABSTRACT

Internet of Things (IoT) is the conceptual idea of remotely connecting and monitoring (things)to real world objects through the Internet. When you come in our home, this concept can be provide to make it smart, secure and automated. This IoT idea focuses on make smart wireless home security systems which sends a message and alert you as an owner of homeby using Internet. An automatic door control system working through a mobile app and also through a keypad was achieved. IoT refers to the infrastructure of connected physical devices which is growing huge number of devices and real world (things) objects are getting embedded with the Internet. Home security is a very useful application of IoT and we are using it to create an economical security system for homes as well as industrial application.

Keywords: IOT, Arduino, Node MCU, WI-FI, Smart phone.

3-D Conduction Heat Transfer Analysis in Different Coordinate System-

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ABSTRACT

Conduction heat transfer is the transfer of heat through matter (i.e., solids, liquids, or gases) without bulk motion of the matter. In another ward, conduction is the transfer of energy from the more energetic to less energetic particles of a substance due to interaction between the particles. Conduction heat transfer in gases and liquids is due to the collisions and diffusion of the molecules during their random motion. On the other hand, heat transfer in solids is due to the combination of lattice vibrations of the molecules and the energy transport by free electrons. For example, heat conduction can occur through wall of a vein in human body. The inside surface, which is exposed to blood, is at a higher temperature than the outside surface.

The objective of this paper is to provide a good understanding of the heat conduction equations and boundary conditions for the use in mathematical formulation of heat conduction problems.

Keywords: Conduction, bulk motion, free electron.

Development of A New Class of Natural Fiber Composite Material Using Human Hair and Coir Fibers

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ABSTRACT

Fiber-reinforced polymer composites (FRPC) consists of fibers that act as a reinforcing agent and a matrix phase to bind the fibers together thereby producing new material with combined properties of each of its constituents. It is a well-known fact that human hair is second highest in strength per unit thickness after spider's web. This makes human hair a suitable substitute for some existing expensive materials by fabrication of a new composite material that uses human hair as one of the reinforcing materials. In the present work, we utilize the human hair and the coir fibers in appropriate proportion with polyester resin as a matrix to develop a new natural fiber composite material. All the composite material samples are developed with fiber and resin in the ratio 1:9. The newly developed material is tested for bending strength, impact strength, and water absorption to investigate its mechanical properties. The developed material is found to have certain exceptional properties which justify that the developed material might replace glass fiber composite and in certain cases can even replace carbon fibers. The results of the tests suggest thata maximum impact strength of 13.174 kJ/m2is obtained for the specimen with nomenclature IL3 which has human hair and coir in the ratio 3:2.From the results of water absorption test, it is found that the developed material is almost completely water resistant with maximum water absorption percentage of only 2.13% in WCH1 specimen. It is observed that the fiber orientation does not play a major role in water resistance, it is only the fiber content which plays an important role in water resistance. The maximum flexural strength obtain edis 36.270MPa for the specimen BL4 with hair and coir in the ratio 4:1.Further analysis of the results suggests that the properties of the developed natural fiber composite are influenced by parameters such as relative volume fraction of various fibers used, fiber orientation, and fiber aspect ratio among others. By repeated experimentation on specimen of different compositions and fiber orientations, the notable properties corresponding to each specimen are noted and the specimen with the most significant of each property has been marked to be utilized in future applications. Also, the developed material is eco-friendly and biodegradable in nature.

Keywords: natural fiber composites; mechanical properties; water resistant test; bending test; impact test.

Path Optimisation In Mobile Adhoc Network Using Nemo

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ABSTRACT

This paper gives a brief description of connectivity between two MANETs using the concept of NEMO. Various wireless routing protocols are used which have their own advantages and disadvantages. This solution deals with optimising the path during conditions when the mobile network goes to a different location from the present location. this method reduces the data loss and also maintains the time of transfer. We have also tried to reduce the delay generated and an optimal path for the transfer of data. To avoid data loss we use binding registration in the peer to peer connectivity which can cause substantial time delay. We are basically dealing with reduction through route optimisation.

Keywords : MANETs, wireless routing.

Study on Computational and Thermal Behavior of PEGBE Solution

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ABSTRACT

The present study is used to study the interaction between poly (ethylene glycol) butyl ether (PEGBE) 206 with 1- butanol and 2-(Methylamino) ethanol (MAE) mixtures with the variation in temperature and concentration using volumetric and acoustic methods. The physical quantities like density (ρ) and sound velocity (u) of poly (ethylene glycol) butyl ether (PEGBE) 206 and their binary systems (PEGBE 206 + 1-butanol, PEGBE + MAE) have been evaluated at 293.15, 303.15 and 313.15 ^{0}K at atmospheric pressure. The sound velocity mixing rules were used to test the accuracy of the experimental data. The derived properties such as apparent molar compressibility , apparent molar volume, molar sound velocity (R), relative association (R_A) and relaxation strength were also calculated. Using evaluated physical quantities are useful for describing the molecular interactions that exist between the components in binary systems. This work also tests various sound velocity mixing rules to calculate the sound velocity of the binary mixture from pure component data.

Keywords: Sound Velocity, Density, Binary Mixture, Molar Volume.

E-commerce Web Application Using Mern Technology

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ABSTRACT

E-Commerce Shopping Cart is an application that will manage the details of shopping , online payments , customer login , purchases , revenue collection etc. It manages all the information about Shopping , Products and Customer. Through this application user or customer can but their favourite products online by doing quick and easy online payments. Customer can check its cart history whenever required. Admin of this application can check all the details related to customer shopping , customer login or register , sales , payments , revenues etc very easily through admin dashboard. E-Commerce Shopping Cart, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping

Keywords: React.js, MongoDB, Node.js, Express.js

Green Synthesis of Titania and Titania-Silver Nanoparticle from Novel Plant Extract of Origanum Majorana

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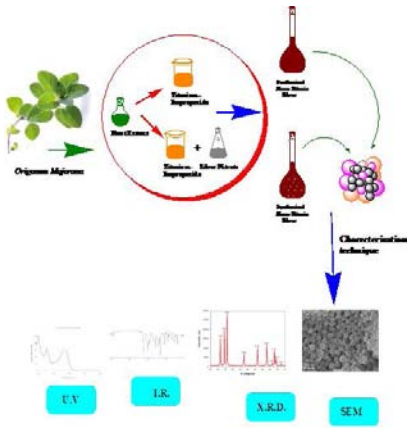
Graphical Abstract



ABSTRACT

TiO_2 Nanomaterials are synthesized by facile, novel, greener, sustainable, fast, and eco-friendly techniques are now-a-days getting wide attention in all the branches of science. Metal oxides nanoparticles are extensively applicable to perform distinctive physiochemical properties in various types of biological applications. Among metal oxide TiO2 is best knownforextensive approaches in nanotechnology, biotechnology and medicine. Our approach is for plant mediated green synthesis of TiO_2 and Ag-TiO_2 nanoparticle by aqueous leaf extract of *Origanummajorana* During the study different result was observed and they were examined by the UV-visible spectrum as the basic characterization and further formation of Titanium oxide NPs were confirmed by FTIR, SEM, and XRD. The method was eco friendly and less hazardous as compared with other conventional methods,

Key words **:**GreenSynthesis, *Origanummajorana*, Titanium Oxide nano particles.

Wireless Sensors for Internet of Things (IOT)

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ABSTRACT

Solar Abstract: Wireless technology has become a milestone in advancement of tiny technology that is electronics. Wireless system development is a revolution for industrial sector and upgrade lifestyle in high tech lifestyle. The central element of wireless based IOT is WSN because it has a number of sensor nodes internally connected with the help of wireless channels and ability to monitor the real world objects. Since it is applying a part of wireless sensor, it is applicable in various domains like medicals, agriculture etc. The wireless system based on IOT increases the instant access of data from the surrounding environment and improves the quality of human life. Hence, the attention of this review is to highlight on WSN and architecture classification of wireless systems based on IOT. In spite of this, we also have focused on the challenges associated with integration of IOT to WSN.

Keywords: WSN (wireless sensor network), IOT (internet of things), Sensor node, Integration and Challenges otovoltaic Cell ,Waste bin, Solid works Software, Base Stand, Wheels, Battery Stand.

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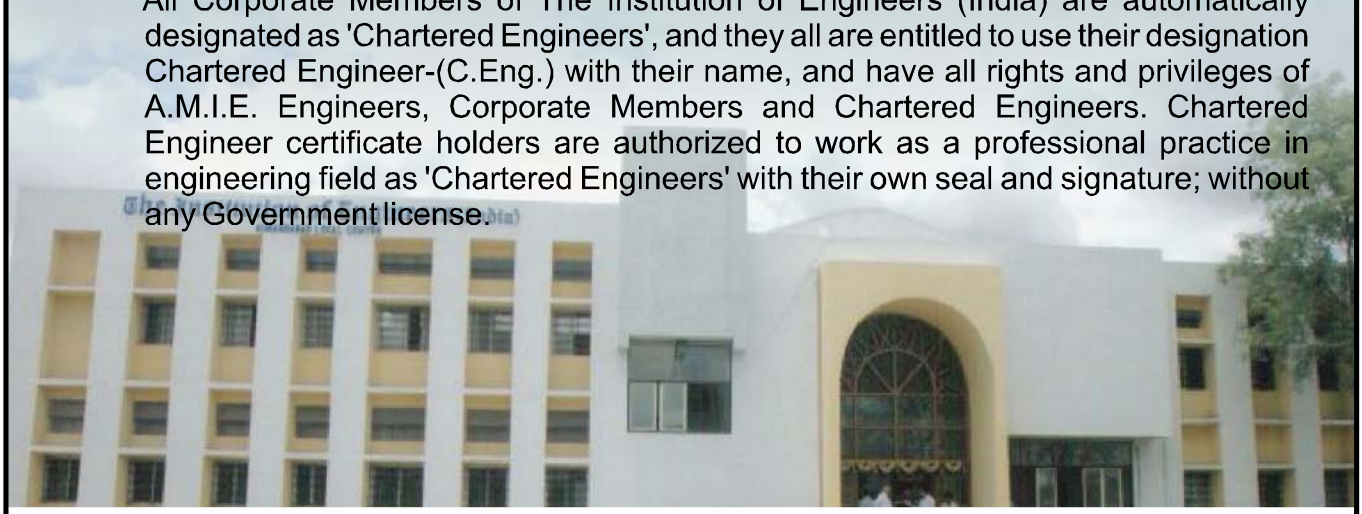

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अल्ट्राटेक सी मेंट
इंजीनियर की पसंद

देश का नं.1 सीमेंट