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IEI EPITOME

A Century of Service to the Nation

In this issue

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Announcements

Members in the NEWS

Dr Dinesha B L, AMIE
Young Scientist
Centre for Nanotechnology, University of Agricultural Sciences, Raichur, Karnataka
✉ dinirbdgtc@gmail.com

Patent was granted to Dr B L Dinesha by Intellectual Property India, Patents Designs, Trade Marks, Geographical Indications, The Patent Office, Government of India for an invention entitled '**Development of Chitosan Zinc Oxide Nanoadsorbent Coated Sand Filter Bed for Dairy Industry Wastewater Treatment**'.

Serial No.	: 044123051
Patent No.	: 347392
Date of Filing .	: 12/02//2019
Date of Grant.	: 22/09/2020
Patentee	: Dr Dinesha B L
Details of Patent	: Development of Chitosan Zinc Oxide Nanoadsorbent Coated Sand Filter Bed for Dairy Industry Wastewater Treatment

Dr Jayan V, MIE
Joint Director/Scientist E
Centre for Development of Advanced Computing (C-DAC), Bidhannagar, Kolkata, West Bengal
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Dr Jayan V was awarded the degree of **Doctor of Pholosophy** (PhD) from **National Institute of Technology Karnataka, Surathkal** dated **4 May 2022** on submission of his thesis titled '**Social Media and Health Care: A Select Study in Indian Context**' and successful completion of all requirements.

Er Somnath Mahato, AMIE
Senior Research Fellow
The University of Burdwan, Raiganj, Burdwan, West Bengal
✉ somnathmahato1@gmail.com

The paper titled '**Compact GNSS Modules for Disaster Moitoring System**' authored by Somnath Mahato, Surajit Kundu and Anindya Bose and presented by **Sonmath Mahato** in the track of **Disaster Management** was adjudged as a **SPRINGER BEST PAPER** at **NERC 2022**, IIT Guwahati.

Members in the NEWS

Mr Dipankar Das, AMIE
Ph.D. Scholar
Department of Material Science and Engineering, Tripura University
(A Central University), Suryamaninagar, Agartala, Tripura
✉ dipankar748@gmail.com

Dipankar Das has been awarded as **Best Oral Presenter** during Session **Renewable Energy and Green Processes** in the International Conference on '**Technological Interventions for Sustainability (Chem-Conflux[22])**' held at **Motilal Nehru National Institute of Technology Allahabad**, Prayagraj during **14-16 April 2022**.

55th ENGINEERS' DAY: 15 September 2022

Theme: Smart Engineering for a Better World


Bharat Ratna Sir M Visvesvaraya

September 15 is celebrated every year in the country since the year 1967 as "Engineers' Day" to commemorate the birthday of the legendary engineer Sir Mokshagundam Visvesvaraya. Sir Visvesvaraya, an eminent Indian engineer and statesman was born in a remote village of Karnataka, the State that is incidentally now the Hi-tech State of the country. Due to his outstanding contribution to the society, Government of India conferred "Bharat Ratna" on this legend in the year 1955. He was also called the precursor of economic planning in India. His learned discourse on Economic Planning in India, Planned Economy for India and Reconstructing India, was the first available document on the planning effort of the country and it is still held as the parent source matter for economic planners. A theme of national importance is chosen every year by the Council of the Institution and deliberated at its various State/Local Centres to educate the engineering fraternity in general and the society in particular. This year the 54th Engineers' Day will be celebrated all over the country on the theme "Smart Engineering for a Better World".

The 55th Engineers Day celebration on the theme 'Smart Engineering for a Better World' will be celebrated by The Institution of Engineers (India) at its various State & Local Centres to take a stock of various capability and capacity building initiatives undertaken in crucial sectors like road and rail connectivity, drinking water, agriculture, healthcare and nutrition, affordable housing and better governance through induction of smart technologies to achieve Sustainable Development Goals in a phased manner. The societal engineering aspect will also be delved into as it is a deciding parameter in ascertaining the extent of for developing a smart infrastructure of inclusive nature as well as creation of newer job openings. The theme 'Smart Engineering for a Better Future' also encompasses issue of environmental sustainability. There is no well established roadmap towards building a smart infrastructure and trying to replicate a generic global template might not work. Such developments are extremely contextual and should reflect challenges, priorities and aspirations at the regional level. The solutions would require synergy between industry, academia and government and should foster an ecosystem where different players can participate and share best practices and develop action plans for switching to a smart infrastructure for a sustainable and prosperous future.

The engineers need to understand that there is tremendous pressure on the existing service infrastructures which are inadequate and not designed to sustain challenges like air pollution, waste management, traffic congestions, effective healthcare and housing for all etc. This will require finding sustainable and inclusive solutions to provide affordable housing, healthcare, nutrition, mass rapid transportation and drinking water especially to the urban populace which may later be replicated in other areas in a phase wise manner.

An interesting commonality in the nature of these challenges is dealing with massive levels of digitization and generation of data. These perceived challenges are veiled opportunities to leverage data science and analytics and thereby induct smart engineering to deal with major global challenges, such as adverse effects of climate change, water scarcity, mixed energy usage, reducing the digital divide among others. The engineering profession is undergoing a paradigm shift with the induction of digitization and emphasis on man-machine interface with induction of logical thinking in machines. Automation and analytics has proved to be decisive and has brought about changes in conceptualization of all major verticals of engineering. Investing in capacity building of smart infrastructure ensuring smart delivery of civic services will serve the broad societal interest with ramifications leading to establishment of effective and accountable governance system congruent to our needs.

As engineers it is important that we adopt smart engineering to leapfrog into new realms in this era of smart engineering for a better tomorrow.

PUBLICATION by Members

Papers published in the Journals / Proceedings

Prof Lala Behari Sukla, FIE
Director
Biofuels and Bioprocessing Research Center, Institute of Technical Education and Research, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, Odisha
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Title of Paper: **Tungsten Dissolution from Hutti Goldmine Overburden by *Aspergillus niger***

Geomicrobiology Journal, 39(6), 2022, pp 496-501

DOI: https://doi.org/10.1080/01490451.2022.2036878

Co-authors: Archana Pattanaik, Niharbala Devi, Nilotpala Pradhan & Debabrata Pradhan

Abstract: Tungsten is an important alloying component for the production of different materials. Its efficient extraction from different sustainable resources is necessary to meet the growing demand in the future. In this context, an attempt has been made to recover it from a goldmine overburden sample using the fungal bioleaching technique. The sample contains 0.023% of WO3 in the form of scheelite. The prospect of bioleaching for tungsten recovery from the sample was evaluated by varying pulp density from 1 to 7% (w/v). The leaching rate of tungsten decreased with the increase of pulp density. The maximum tungsten recovery of 86.8% (w/w) could be achieved at the condition of pulp density, 1% (w/v); pH, 6.8; temperature, 32°C; speed, 120 rpm; contact time, 10 days. Growth of the fungal strain Aspergillus niger in terms of organic acids production was evaluated during the bioleaching experiment and found to be maximum at the pulp density of 1% (w/v). The leaching kinetics of tungsten followed the chemical control model.

Keywords: Tungsten, Bioleaching, Organic Acids, Aspergillus Niger, Pulp Density

Mr Ram Avtar, MIE
Executive Engineer
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Title of Paper: **New Trends in Smart Billing and it's Efficiency for Smart Cities**

ISUW 2021: Proceedings of the 7th International Conference and Exhibition on Smart Energy and Smart Mobility for Smart Cities, Lecture Notes in Electrical Engineering, 843, 2022, pp 343-350, ISSN 1876-1100

DOI: https://doi.org/10.1007/978-981-16-8727-3

URL: https://link.springer.com/chapter/10.1007/978-981-16-8727-3_37

Abstract: Smart energy billing system is a humble attempt to eliminate the waste of time in taking meter reading and also to reduce human efforts. Smart meters have brought big revolution in the fields of energy and power measurement. Worldwide at so many places smart meter billing system has been already deployed but in India like in Uttar Pradesh it's just a beginning of smart meter billings deployment. This work describes the key elements in a Smart Meter Billing system and compiles the most employed technologies and standards as well as their main features.

Keywords: Android Mobile Billing Application (AMBA), Central Billing System (CBS), Spot Billing Machine (SBM), Trust Billing (TB)

PUBLICATION by Members

Dr Manikandan S, MIE
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Title of Paper: **Deepq: Residue Analysis of Localization Images in Large Scale Solid State Physical Environments**

AIP Conference Proceedings, 2393(1), 2022, 020078

DOI: https://doi.org/10.1063/5.0074142

Co-authors: K S R Radhika, M P Thiruvenkatasuresh & G Sivakumar

Abstract: Deep Learning is the process to led machine learning, natural language processing and neural networks. The various deep learning models, computer vision systems and artificial intelligence services are used to study of various real time applications. Due to lack of computing resource the conventional neural network are produces delay in progress and reduce the GPUs performance and throughput. In this paper we review difference deep learning approaches with increases GPUs performance and apply various image processing classification and localization techniques. The high availability and GPUs performance can be verified by state-of-arts results using conventional deep learning methods.

Keywords: Deep Learning, Computer Vision, GPU Performance, Classification, Localization, CNN Model, DeepQ Process

Mr Basavaraj S Sannakashappanavar, AMIE
Assistant Professor
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Title of Paper: **Investigation of Schottky Barrier Height using Area as Parameter: Effect of Hydrogen Peroxide Treatment on Electrical Optical Properties of Schottky Diode**

Optical Materials, 119, 2021, 111341

DOI: https://doi.org/10.1016/j.optmat.2021.111341

Co-author: Aniruddh Bahadur Yadav

Abstract: RF sputtered 25 nm ZnO thin film surface treated with H_2O_2 has produced the Schottky diodes of improved electrical and optical properties. The enhancement is associated with adsorbed and introduced oxygen at the film's surface and in bulk while H_2O_2 treatment as revealed by the XPS analysis. Further, H_2O_2 treatment also has improved the ZnO thin film's surface morphology, crystal structure, and optical properties studied by XRD, SEM, and PL measurement. The experimentally measured energy band gap is compared with density functional theory computation-based result to find the possible cause behind the change in edge excitation energy band after treatment. Besides, an alternative method by considering the Schottky diode area as a parameter is introduced to calculate barrier height. The five diodes average barrier height, calculated by the conventional Schottky model, was lower than the barrier height obtained by this proposed method. This result is obtained for the diodes fabricated on the nontreated and treated sample. The conventional and proposed methods showed Schottky diodes potential barrier lowering under UV illumination, and it was associated with the change in carrier density and desorption of adsorbed oxygen on the ZnO surface. The treated surface's low conductivity and high oxygen concentration governed the superior UV detection capability of Schottky diodes fabricated on it. The literature demonstrates many similar studies for large thicknesses of ZnO 150–1000 nm but not on ultra-thin (25 nm) ZnO film, even though the UV light can penetrate ZnO approximately to this depth.

Keywords: ZnO Thin Film, Schottky Contact, Hydrogen Peroxide Treatment, Barrier Hieghtconsidering Area as Parameter, UV Detection

PUBLICATION by Members

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Title of Paper: **Adsorption of SO_2 on ZnO Nanowires using Activated Carbon by Langmuir Adsorption Isotherm**

Adsorption Science and Technology, 2022, Article ID 1287890

DOI: https://doi.org/10.1155/2022/1287890

Co-authors: L Natrayan, Khadijah Mohammedsaleh Katubi, Daoud Ali & Dumesa Gudissa Lemu

Abstract: Sulphur dioxide (SO_2) is one of the contaminants present in the environment. They are the by-product of combustion, industrial pollution, generation of electricity, etc. After some reactions in the atmosphere, SO_2 changes its form and produces acid rain. The presence of SO_2 needs to be detected to combat its effect. Many nanosensors are designed to detect the presence of SO_2 in the environment. Zinc oxide (ZnO) nanowire sensor is one of those sensors used for SO_2 detection. The size, structure, cost-effectiveness, and unique properties made it a choice for sensing purposes. Activated carbon is another compound that has porous substances that helps the adsorbate to settle down on the large surface area of its adsorbent surfaces. Combining the nature of ZnO nanowire and activated carbon, the adsorption of SO_2 can be increased. This paper proposes a novel technique involving the activated carbon in the ZnO nanowire sensor to increase its SO_2 adsorption capacity and rate. The Langmuir adsorption isotherm is used to find the adsorption efficiency between the solid adsorbent and gaseous adsorbate. MATLAB simulation was carried out for the proposed work in which it is seen that the novel method shows 33.34% efficiency in terms of SO_2 adsorption capacity. The response of the proposed sensor shows 23% efficiency over time. The analysis shows that the usage of the activated carbon increases the adsorbent site for SO_2 adsorbate to adsorb on the surfaces. According to the adsorption quantity, SO_2 level has been obtained in the environment.

Keywords: Sulphur Dioxide, Nanowire, Nanosensor, Langmuir Adsorption Isotherm

IEI AWARDS

CALL FOR PAPERS

The **Steel Authority of India Ltd** (SAIL) has instituted two Awards, namely, **SAIL AWARD** and **DR M VISVESVARAYA AWARD** to be given away every year during the Indian Engineering Congress to author/s of the articles adjudged best on selected topics.

The topics for the year 2022 are given hereunder.

SAIL AWARD

Countering Cyclic Downtrends in Steel Industry

DR M VISVESVARAYA AWARD

Contribution of Indian Steel Sector towards Net Zero Emission by 2070

Intending contributors are requested to send the soft copy of the paper by email to **award@ieindia.org** (with subject heading **Paper for SAIL/Dr M Visvesvaraya Award**) and submit four printed copies of their articles to :

Director (Technical)
The Institution of Engineers (India)
8 Gokhale Road, Kolkata 700 020.

Last date of submission: October 15, 2022

For downloading the template of paper and declaration form, please visit the following link:
https://www.ieindia.org/webui/IEI-Activities.aspx#Call_Papers

PUBLICATION by Members

Mr Jitendra Mohan Giri, AMIE
Associate Member
Galgotias University, Greater Noida, Uttar Pradesh
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Title of Paper: **Recent Progress in the Design of Sustainable Thermoelectric Cooling Systems**

Advances in Mechanical and Energy Technology, Lecture Notes in Mechanical Engineering, Springer, Singapore, 2022, pp 375-385, Online ISBN: 978-981-19-1618-2, Print ISBN: 978-981-19-1617-5

DOI: https://doi.org/10.1007/978-981-19-1618-2_37

Co-author: Pawan Kumar Singh Nain

Abstract: The thermoelectric cooling (TEC) modules are electronic components that work on the principle of the Peltier effect. It functions as a heat pump moving heat from one side of the device to the other. The growing adoption of electric vehicles, growing inclination toward renewable energy sources, and increase in demand for energy-efficient consumer electronics are the key factors driving the thermoelectric devices market. However, the high cost of thermoelectric modules, design complexity and heat dissipation issues restrain the market growth. The reduced size of the thermoelectric elements is one goal for TEC module manufacturers. Various benefits can be achieved if TEC is made lighter and smaller. When the size of a TEC is reduced, however, we run into issues with heat transfer. It is difficult to transfer heat (source to sink) when end plates are small in cross-section.Increasing the gap between the TE elements would almost certainly solve the issue. But conduction, convection, and radiation heat losses increase substantially. In recent years, new techniques to design thermoelectric coolers have made significant progress. We summarize recent progress in the design of sustainable thermoelectric cooling devices in this review, which have been established to enhance various performance requirements and add new functionality.

Keywords: Thermoelectric Cooling, Peltier Effect, Cooling Capacity, Coefficient of Performance, Exergy

37TH INDIAN ENGINEERING CONGRESS

Theme: *Role of Engineers for Creating a Sustainable & Self-Reliant India*

Organised by : **The Institution of Engineers (India), Tamil Nadu State Centre**

e-mail: **technical@ieindia.org** | website: **www.ieindia.org**

Empanelment of Chartered Engineers of IEI

IFCI Limited (a Govt. of India undertaking), New Delhi [erstwhile Industrial Finance Corporation of India] has invited application for '**Empanelment of Chartered Engineers**' for assessment of asset classes viz. '**Civil Works**' and '**Plant & Machinery**'. The applicants should be registered with The Institution of Engineers (India) in Civil, Mechanical, Electrical and Chemical Engineering Divisions.

Last date of submission: **08 August 2022**

The details are available in the link:

https://www.ifciltd.com/2022/RFP%20for%20Chartered%20Engineer.pdf

PUBLICATION by Members

Mr Dipankar Das, AMIE
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Title of Paper: **A Review of Advanced Mullite Ceramics**

Engineered Science, 18(2), 2021, pp 20-30, Print ISSN: 2576-988X

DOI: 10.30919/es8d582

Co-authors: Romit Roy & Prasanta Kumar Rout

Abstract: Mullite is becoming one of the most extensive oxide ceramic materials for advanced structural and functional ceramics because of its remarkable properties. Such properties are low density, low thermal expansion, excellent creep resistance, low thermal conductivity, excellent strength at high temperature, and good chemical stability. Nowadays, mullite has vast areas of application in various fields such as structural, electronic, optical, and high-temperature, etc. Mullite exists in orthorhombic crystal structure with the stoichiometric composition of $3Al_2O_3 \cdot 2SiO_2$. This study provides an overview of the mullite's structure, properties, synthesis routes, various modern applications. Following a short introduction, this review paper focuses on the basic crystal structure of mullite. Secondly, this paper deals with various properties and applications areas of mullite ceramic, Thirdly, authors have listed different stating raw materials and various synthesis routes to fabricate mullite ceramic in table format and try to compile the research outcome by other researchers. Finally, the last part of the study is the various applications of mullite ceramics, mullite synthesis challenges, and waste material utilization.

Keywords: Chemical Vapor Deposition, Mullite, Mullitisation Temperature, Sol-gel, Spray Pyrolysis

PUBLICATION by Members

Mr Sai Sarath Kruthiventi, AMIE
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Title of Paper: **Modelling and Parametric Analysis of Conventional Solar Still By using Passive Control Techniques**

International Journal of Ambient Energy, 43(1), 2022, ISSN 2162-8246

DOI: http://dx.doi.org/10.1080/01430750.2022.2086910

Co-authors: Sakthivel M Nagaraju Vellanki, Shasikanth K & Diwakar G

Abstract: The present paper deals with experiments performed on a conventional single slope solar still with various quantities of saline water (20 kgs, 30 kgs and 40 kgs) and also deals with experiments conducted in a modified still which is directly placed on ground without insulation at the sides and bottom of the still. Further a modification is made to a still by removing insulation so that heat stored in the earth surface is utilized to heat the saline/sea water during the evening hours. Initially experiments are performed for 20 kg, 30 kg, 40 kgs of saline water using conventional still to get the optimized quantity. From the results it is observed that there is an increase of 18.5% in the yield when earth heat is used and 28% when 25 mm depth of granite gravel is used in addition to earth heat. Further the study is extended to compare the analytical and experimental cumulative yield for three different quantity of saline water.

Keywords: Energy Storage Material, Granite Gravel, Hourly Yield, Modified Still, Solar Radiation

Nota BENE

We would like to thank our erudite members for sharing their professional achievements through the IEI Epitome and making the content more abounding and at the same time inspiring many others to share their accomplishments as well. To streamline the process and make it convenient for the member to give their inputs we would like to obtain the information in a more structured and comprehensive manner. We would request our members to send the details of their achievements as per the appended formats only.

FORMAT FOR ACHIEVEMENT BY MEMBERS

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(i)	Prefix (Er/Dr/Prof)	
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(ix)	Details of Award/Achievement#	
(x)	Month & Year of Achievement/ Date of Achievement	
(xi)	Supporting Documents/links [which are clearly indicative of the incumbent's achievement(s)]	

 # Reporting of Award of stipend/fellowship at PG/PhD level and awards from esoteric events/communities may be avoided.

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(ix) Tick the appropriate BOX	☐ Patent ☐ Designs ☐ Trade Marks ☐ Geographical Indications
(x) Issuing Authority	
(xi) Serial No	
(xii) Patent No	
(xiii) Date of filing (DD/MM/YYYY)	
(xiv) Date of Grant (DD/MM/YYYY)*	
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(xvi) Details of Patent	
(xvii) Term for which the above (ix) has been granted	

** Copy of Certificate of the Grant of Patent*

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(vi) Designation	
(vii) Organization of affiliation	
(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Title of Paper	
(x) Name of Journal/Proceeding/Technical Volume	
(xi) Volume No (Not required for Indian Engineering Congress)	
(xii) Issue No (Not required for Indian Engineering Congress/Annual Technical Volumes of IEI)	
(xiii) Theme (Only for Technical Volumes of IEI)	
(xiv) DOI: (Not required for Indian Engineering Congress/Annual Technical Volumes of IEI)	
(xv) ISSN	
(xvi) Date of Publication (Date-Month-Year)	
(xvii) Co-authors (if any)	
(xviii) Abstract in full	
(xix) 5/6 Keywords	
(xx) Supporting Documents/links [which are clearly indicative of the incumbent's achievement(s)]	

 # publications in local seminar, conference and symposia will not be accounted

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(viii) Membership No (please use the prefix F/M/AM as the case may be)	
(ix) Title of Book	
(x) Title of Book Chapter	
(xi) Book Chapter Number	
(xii) Publisher Details	
(xiii) ISBN	
(xiv) Date of Publication (Date-Month-Year)	
(xv) Co-authors (if any)	
(xvi) About the book (100-150 words)	
(xvii) Supporting Documents (complimentary copies for IEI Headquarters)/links [which are clearly indicative of the incumbent's achievement(s)]	

** accommodate works published in journals/reputed conference proceedings/books for the last one year*

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The Institution of Engineers (India) reserves a coveted privilege in being the largest multi-disciplinary professional body of engineers encompassing 15 engineering disciplines with a Corporate membership of over 2.4 lakhs maintaining a national/international presence through hundred twenty five Centres and six Overseas Chapters, Fora's and Organ (Engineering Staff College of India). The Institution has been disseminating the various information through IEI-Epitome and other publications.

We would like to share with you that we are now providing the facility to advertise engineering / technical products/services, information brochure, recruitment notices etc. in our official publication portal IEI Epitome (12 issues-140000 reach online). Besides, IEI Epitome is also uploaded on our website (www.ieindia.org) on a monthly basis and is accessible to all free of cost. Given its immense footprint in the engineering and technical diaspora spanning the globe, IEI with its distinguished heritage of a century provides you the ideal portal to connect with the National and International Engineering and Technical Community at very competitive rates. We invite you to take this unique and privileged opportunity to advertise and communicate your service and product portfolios under our prestigious banner and make us your brand emissaries in your promotional campaigns.

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Notification for R&D Grant-in-Aid

To promote appropriate technology, assist in building up design & research talents and, most importantly, to help in nurturing potential R&D venture amongst engineering students pursuing Diploma/UG/PG/PhD courses, The Institution of Engineers (India) had instituted the R&D Grant-in-Aid program way back in 2001.

Like every year, the Institution invites applications for the session 2022-2023 for funding industry-oriented R&D projects and research initiatives aimed at improving the life-style of common people from engineering students pursuing full time Diploma/UG/PG/PhD engineering program in AICTE/UGC/NAAC approved Institutions/Colleges/Universities. The application form and guidelines are available in our website **https://www.ieindia.org**. The projects should be carried out under the guidance of faculty members who are Corporate Members of IEI. Membership criteria for student(s), guide(s) and Institution(s) are as follows:

Project Category	Student/Applicant Membership	Guide(s) Membership	Institutional Membership
1. Diploma	Exempted [Membership of Student Chapter is desirable]	AMIE/MIE/FIE	Not Mandatory
2. UG (BE/BTech/ Equivalent)	'Student Member' (SMIE)	AMIE/MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
3. PG (ME/MTech/ Equivalent)	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
4. PhD	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank

The soft copy of the duly filled-up applications (in editable format), as per the pro-forma available in our website www.ieindia.org, should be sent through email to research@ieindia.org and one printed copy of the same should reach the following address:

Director (Technical)
The Institution of Engineers (India)
8 Gokhale Road, Kolkata 700 020

Applications received in format other than that available on our website will not be accepted. Application should be forwarded through the Guide, Head of the Department or Head of the Institution. Please note that preference will be given to project proposals received from Institutions who are members of The Institution of Engineers (India) and with NBA / NAAC Accreditation or valid NIRF Rank. Kindly go through the guidelines (visit link https://www.ieindia.org/webui/IEI-Activities.aspx#RnD-Initiative) carefully before filling up the application.

The grant is not intended for the faculty members who have access to other avenues of research funding. Proposals received will be scrutinized and the recipients of R&D Grant will be informed accordingly.