



# I.E.I NEWS

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A CENTURY OF SERVICE TO THE NATION

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## Thirty-seventh National Convention of Mechanical Engineers and National Seminar

### Advances in Battery Technologies for Electric and Hybrid Vehicles



Telangana State Centre of the Institution organized the 37<sup>th</sup> National Convention of Mechanical Engineers during December 09-10, 2022 at Hyderabad under the aegis of Mechanical Engineering Division Board [MCDB], IEI. A National Seminar was organized on the theme **Advances in Battery Technologies for Electric and Hybrid Vehicles**. Dr B V R Mohan Reddy, Founder and Chairman, Cyient Limited, Hyderabad graced the inaugural function as Chief Guest. Dr H O Thakare, Immediate Past President, IEI; Prof K Hemachandra Reddy, Chairman, Andhra Pradesh State Council of Higher Education; Dr T M Gunaraja, Past

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## Thirty-fourth National Convention of Marine Engineers and National Seminar

### Contemporary Developments in Maritime Technologies

Visakhapatnam Local Centre, IEI organized the 34<sup>th</sup> National Convention of Marine Engineers during December 02-03, 2022 at Visakhapatnam, in association with DRDO, Ministry of Defense, Government of India, Visakhapatnam under the aegis of Marine Engineering Division Board [MRDB], IEI. A National Seminar was also organized concurrently on the theme **Contemporary Developments in Maritime Technologies**. Dr V Bhujanga Rao, Chairman,



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## From the President's Desk.....



### Decarbonisation and Green Hydrogen Economy- India with Reduced Carbon Footprint

As burning of fossil fuels for economic development results in substantial increase of CO<sub>2</sub> emission, energy transition with the application of clean and alternative energy strategies is the most significant issue. At the onset, decarbonization process for removing carbon from energy production is the potential alternative. Decarbonisation is the reduction of carbon dioxide emissions through the use of low carbon power sources and achieving a lower output of greenhouse gasses into the atmosphere. Decarbonisation refers to the process of reducing 'carbon footprint' and lowering the amount of greenhouse gas emissions (GHG) produced by the burning of fossil fuels.

Hydrogen is an ideal green fuel and Hydrogen energy is extremely adaptable, which may be utilized as gas or liquid, transformed into fuel, power or heat. Hydrogen produced from electrolysis of water using renewable-driven energy sources, is known as 'green hydrogen'. It powered entirely by renewable energy, generates no polluting emissions, and is the cleanest and most sustainable source. The rapidly declining cost of renewable energy is another motivating factor for the growing interest in green hydrogen. Moreover, green hydrogen has emerged as one of the strongest candidates for helping decarbonize sectors less dependent on electricity and thus approach towards a step closer to carbon neutrality. Green hydrogen and its derivatives play the vital role in clean energy transition. Green hydrogen manufacturing technologies are observing a renewed wave of interest. This is due to the expanded uses of hydrogen across multiple sectors including power generation, manufacturing processes in industries such as steelmaking and cement production, fuel cells for electric vehicles, heavy transport such as shipping, green ammonia production for fertilizers, cleaning products, refrigeration, and electricity grid stabilization.

India has joined the global race to develop green hydrogen

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# Advances in Battery Technologies for Electric and Hybrid Vehicles

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President, IEI and Dr G Ranganath, Chairman, Committee for Advancement of Technology & Engineering (CATE), IEI graced the occasion as the Guests-of-Honour. Dr Enti Ranga Reddy, Chairman, MCDB, IEI presided over the function. The programme started with welcome address delivered by Er B Brahma Reddy, Chairman, Telangana State Centre, IEI. In his address, Er Reddy highlighted the activities of Telangana State Centre and its contribution towards achieving the objectives of IEI. On the occasion, Shri Parthasarathi V Garikipati, Technical Advisor (Automotive HVAC-Engineering), Sanden Vikas Private Limited, Part of Vikas Group; Dr Wooday P Krishna, Former Member (Minister of State Rank), Karnataka State Disaster Management Authority; Dr M Rama Monohara Babu, Distinguished Scientist & Director, Advanced Systems Laboratory, Hyderabad and Prof P Laxminarayana, Registrar, Osmania University, Hyderabad were felicitated as eminent engineering personalities for their commendable services rendered in the field of Mechanical Engineering. The recipients of IEI Young Engineers



Award in Mechanical Engineering Division for the year 2021-22 for their immense contribution in the field of mechanical Engineering are; Dr Ravi Pratap Singh, Assistant Professor, Department of Industrial & Production Engineering, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab; Dr Padmakumar Muthuswamy, Manager, Product Engineering, Kennametal Shared Services Private Limited, Tumkur Road, Bangalore and Dr (Ms) Neha Khatri, Senior Scientist, Department of Manufacturing Science & Instrumentation, CSIR-Central Scientific Instruments Organisation, Chandigarh. For the year 2022-23, the IEI Young Engineers Award in Mechanical Engineering Division was presented to Dr Jibin T Philip, National Post Doctoral Fellow, SERB-DST India, Surface Interactions and Manufacturing Laboratory, Department of Mechanical Engineering, Indian Institute of Science, CV Raman Road, Bangalore. Dr G Venkata Subbaiah, Honorary Secretary, Telangana State Centre, IEI proposed the vote of thanks.

The Dr S C Bhattacharyya Memorial Lecture was delivered by Prof D N Reddy, Former Vice Chancellor, Jawaharlal Nehru Technological University Hyderabad (JNTUH), on the topic 'Skill Development for Employability'. In his lecture, Prof Reddy enumerated the significance of skill development of workforce to meet the future demand. He explained the industry expectations, skill gap concerns for industry, skill measurement methodology, different levels of skill competency, employability skills, National Policy on skill development, and so on. Dr Reddy further explained the key features of National Skill Development Policy, measures to improve employability, bridging the education-employability gap etc. The Dr S P Luthra Memorial Lecture was delivered by Prof B S Murty, Director, Indian Institute of Technology Hyderabad on the topic 'Development of Advanced High-Entropy Alloys: A Review'. In his lecture, Prof Murty explained the concepts of High-Entropy Alloys (HEAs), its unique microstructure and impressive properties, which include excellent strength-ductility synergy, high hardness, thermal stability, resistance to fatigue, fracture, corrosion,

oxidation, wear and irradiation. Dr R Venkatesan, National Centre for Coastal Research, Ministry of Earth Sciences, Chennai delivered the State-of-Art Lecture on the topic 'Future of Mechanical Engineering'. A Panel Discussion was organized on the occasion, which was chaired by Dr G Ranganath, Chairman, CATE, IEI.

During the five Technical Sessions, there were ten invited lectures. Dr Vijay, Scientist 'G', ARCI, Hyderabad delivered invited lecture on the topic 'Effort of ARCI towards Indigenous Development of Technologies for the Production of Electrode Materials for the Li-ion Batteries'; A Naryana Teja, D Pravitan and G Raghavendar Rao, BHEL, Corporate R&D, Hyderabad delivered invited lecture on the topic 'Thermal Analysis of Li-ion Batteries Modules for Space Optimization in Strategic Applications'; Dr S Nawazish Mehdi, Senior Professor & Dean (FTD), Mechanical Engineering Department, Lords Institute of Engineering and Technology delivered presentation on 'Performance Evaluation of Fluid Coupling for Hybrid Vehicles'; Mr Ashok Kumar Panda, Executive Engineer, MCEME, Secunderabad on 'Electric Vehicles Adoption & Strategic Growth Plans'; Dr YV Satish Kumar, Director, Asquare Infotech Consultancy on 'Fuel Cells for Underwater Applications'; Yogesh Nandurkar, R L Shrivastava and Vinod Kumar Soni on 'Integration of Various Active and Passive Cooling Techniques on MJT Solar Cell – which play a Vital Role in Electric and Hybrid Vehicles Technology'; Dr Puli Ravi Kumar, Professor, NIT, Warangal on 'Advanced Electric and Hybrid Vehicles'; Dr M Sowjanya, Professor, Department of Mechanical Engineering, CVR College of Engineering, Dr A V S S K S Gupta, JNTUH University on 'Thermal Management of EV Batteries: A CDF Approach for Heat Transfer Enhancement'; Dr N V Rama Rao, Scientist 'F', DMRL, Hyderabad on 'Applications of Magnetic Materials in Electric Vehicles' and Dr Prof C S Krishna Prasada Rao, Head, Q & P Division, Engineering Staff College of India (ESCI), IEI Hyderabad delivered invited lecture on 'Pollution Level in Electric, Hybrid Vehicles and its Impact on Environment-EMS'. Dr Neha Khatri, Young Engineer Awardee delivered presentation on the topic 'Micromachining Process Chain for the Fabrication of Ultra-Smooth Silicon Wafers'; Dr Ravi Pratap Singh, Young Engineer Awardee presented on the topic 'Advanced Machine and Processing Technologies'.

Further, during the technical sessions, papers were presented on diversified topics, which include; Solar Powered Hydrogen Generation and Fuel Cell System: A Promising Solution for Hybrid Electric Vehicle Development in India ; Design Changes and Testing of EV Batteries for Enhanced Safety; A Review Paper on Lithium-Ion Battery Pack Design for EVs; Thermodynamic Analysis of Fuel Cell Based Hybrid Electric Vehicle; Ultra Capacitor based Hybrid Electric Vehicles; Investigation on Usage of Porous Silicon Oxycarbide (/Si-O-C) Ceramics as Potential Anode Material for Lithium-Ion Batteries; Influence of Current Collector Conical Opening Angle on Passive Direct Methanol Fuel Cell Performance etc.

During the Valedictory Function, Shri A Dayanand Reddy, Founder & Managing Director, M/s Vasantha Tools Crafts Private Limited graced the occasion as Chief Guest. Er B Brahma Reddy, Chairman, Telangana State Centre, IEI presided over the function. Dr Enti Ranga Reddy, Chairman, MCDB, IEI addressed the gathering.

Recommendations which emanated from the two-day deliberations were placed on the table, which are as follows.

*Suitable materials be developed indigenously for electrodes of batteries for considerable improvement of operational efficiency; Size of battery should be reduced to save space and reduce the overall weight of the EV; Battery*

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## Sustainable Management of Clean Water & Sanitation in Rural and Urban Areas

**Kancheपुरam Local Centre**, IEI organised One Day Seminar on the theme **Sustainable Management of Clean Water & Sanitation in Rural and Urban Areas** in association with the Department of Civil Engineering, School of Infrastructure, B S Abdur Rahman Crescent Institute of Science & Technology [BSACIST] on 15 February 2023 at Chennai under the aegis of Civil Engineering Division Board, [CVDB], IEI. Universal access to both water and sanitation still remains an issue in India, when a large percentage of the Indian households do not have access to public piped water supply. Water quality is also another major aspect of concern. At the city level, another major problem is the high distribution losses of water. Likewise, only one third of the wastewater is treated. The environmental concerns posed by urban sanitation and clean water supply are two-fold: there is inadequate attention paid to protection of water sources, and there are hardly any effort to move towards conjoint management of water and sanitation. Some of the key challenges in this issue include lack of awareness on sanitation, lack of integrated city-wide approach, access to limited technology and lack of knowledge and skill levels related to both technical and managerial aspects. This seminar served as a comprehensive programme to introduce the thrust areas and opportunities that need to be focused on in urban and rural areas with respect to water supply, water management, wastewater treatment, individual faecal sludge management and collective urban sanitation. Prof (Dr) D Elango, Chairman, Kancheपुरam Local Centre, IEI delivered the Keynote lecture on the topic 'Water Quality and Treatment Facilities for Urban and Rural Areas'. In his address, Dr Elango highlighted different sources of water available in the urban and rural sector in India and said that the increase in population in urban areas are mainly attributed to better job opportunities, education etc. He mentioned that the most challenging part in the urban sector is low sanitation coverage because of overcrowding

and lack of sufficient water supply. However, the water treatment facilities which is available in the urban area may not be available in the villages. This is mainly due to the lack of funding and participation from the government for developing the required infrastructure, he mentioned. The speaker also focused on the sustainable treatment technologies adopted in the villages for the removal of specific pollutants such as fluoride, chloride etc. Dr T Selva Kumar, Former Engineer, Chennai Metropolitan Water Supply and Sewerage Board [CMWSSB] and Research Consultant delivered lecture on the topic 'Urban Water Supply & Sanitation in Rural & Urban Areas of India'. Dr Selvakumar in his address mentioned that for the successful planning & governance and sustainability of urban water supply and sanitation, the focal points are Governance and Institutional Strengthening; Information and Efficiency Improvement; Environment Sustainability and Technology Use; Citizen Participation, Customer Service and Financial Sustainability. Dr Suneethi Sundar, Research Scientist, Water & Effluent Treatment IC, L&T Construction delivered lecture on the topic 'Faecal Sludge and Septage Management in Rural and Urban Areas' and emphasized the necessity of the faecal sludge management. She further discussed the role of Swachh Bharat Mission 2.0 in improving the sanitation by formulating national policy. Dr Sundar further elaborated various options for the grey water management such as leach pits, root zone treatment systems, waste stabilization pond, constructed wetlands, soil biotechnology, phytoid technology. The functioning of the FSTP models establishment in Leh, Ladak (15 KLD), Warangal (15KLD), Ponnampatti (2KLD) were discussed and the scope for business and career opportunities were also emphasized. Dr Priya V S, Associate Professor, Department of Civil Engineering, BSACIST delivered lecture on the topic 'Urban Sanitation in India: Opportunities and Challenges' and discussed on the research on sustainable practices across the globe and India which includes CALETCH technology. The techniques adopted in the decentralized treatment system such as anaerobic digestion, constructed wet lands, settling pond, co-treatment with sewage sludge, planted drying bed were also elaborated. Dr Vasanthi Padmanabhan, Professor & Student Advisor, School of Infrastructure, BSACIST and Dr M S Haji Sheik Mohammed, Professor & Dean, School of Infrastructure, BSACIST were present on the occasion and addressed the audience. Dr G Shanmugasundar, Honorary Secretary, Kancheपुरam Local Centre, IEI delivered Special Address on the occasion.



## Logistics and Supply Chain

**Bareilly Local Centre**, IEI in association with B L Agro Industries Limited, Bareilly organized All India Seminar on the theme **Logistics and Supply Chain** under the aegis of Mechanical Engineering Division Board (MCDB), IEI during 01-02 December 2022. Dr Ghanshyam Khandelwal, Chairman of the Board, B L Agro Industries Limited, Bareilly graced the function as Chief Guest. Keynote speakers of the event were Dr Swatantra Kumar, Entrepreneur and Business Consultant and Mr Sudhir Kumar Gupta, Immediate Past

Chairman, Bareilly Local Centre, IEI. Dr Manish Sharma, DGM-Production & Project, B L Agro Industries Limited, Bareilly presented invited lecture on the topic 'Logistics and Supply Chain'. The programme was started with welcome address delivered by Mr Raj Goel, Chairman, Bareilly Local Centre, IEI. Keynote speaker of the event, Dr Swatantra Kumar delivered lecture on the topic 'Global Supply Chain Management – The Core of Global Business Machine'. He explained that modern global business is collaborative and interdependent and it is almost impossible for economies to survive in isolation. He also said that the expansion of global markets liberalised the economic activities and exchange of goods and funds; Removal of cross border trade barriers made the formation of global markets more feasible; Advances in transportation mediums and development of telecommunication infrastructure like mobile phones, internet propelled the interdependence of economic and cultural activities across the globe. He further opined that the opening up of countries across the globe and fading trade barriers propelled globalisation to its current state. Keynote speaker, Mr Sudhir Kumar Gupta, Immediate Past Chairman, Bareilly Local Centre, IEI delivered



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# Contemporary Developments in Maritime Technologies

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Kims Foundation and Research Centre (KFRC), Formerly Distinguished Scientist & Director General (NS&M), DRDO graced the function as Chief Guest. Dr Y Sreenivas Rao, Outstanding Scientist & Director, Naval Science and Technological Laboratory (NSTL), Visakhapatnam and Dr G A Ramadass, Scientist-H & Director, National Institute of Ocean Technology (NIOT), Chennai were the Guests of Honour. Dr C P Ramanarayanan, Vice Chancellor, Defence Institute of Advanced Technology (DIAT), Pune and Formerly Distinguished Scientist & Director General (HR), DRDO graced the function as Distinguished Guest. Cdr Dr Bhaskar M Bhandarkar, Chairman, Marine Engineering Division Board [MRDB], IEI presided over the function. Dr V Bhujanga Rao, in his address stated that when India looks forward for globalization in a big way, there are a few aspects to be considered in succeeding towards goal, which include effective communication, maintenance of international standards and maritime transportation. Dr Rao in his address underlined the importance of adopting Industry 4.0 concepts in both operation and maintenance of marine assets to meet the global competition and strongly advocated for execution of innovative projects in a time bound manner. Dr Y Sreenivas Rao in his address predicted that



Visakhapatnam could emerge as a marine and naval hub of the world with its enriched naval expertise and presence of major ports and railway network. Dr G A Ramadass in his address discussed on the design of submersibles and the role of NIOT in developing technologies for harvesting of living and non-living marine resources. Dr C P Ramanarayanan in his address highlighted the use of Machine Learning to enhance maritime security. He further explained the initiatives by DIAT to develop an advanced underwater navigation application. Cdr Dr Bhaskar M Bhandarkar, while presiding on the occasion, spoke about the great maritime history of Visakhapatnam and also said that the place possess the infrastructure to become a global leader in maritime sector. Earlier, Dr B Venkataramana, Chairman, Visakhapatnam Local Centre, IEI [Session 2019-2021] delivered the welcome address. Mr PVS Ganesh Kumar, Outstanding Scientist & Associate Director, NSTL, DRDO and Chairman, Technical Committee briefed the audience about the theme. On the occasion, Cmde P Anantharaman (Retd), VSM, Indian Navy; Prof Suresh Chandra Misra (Retd), Indian Institute of Technology Kharagpur & Director IMU, Visakhapatnam and Vice Adm D S P Verma (Retd), PVSM, AVSM, VSM, Indian Navy were felicitated as eminent engineering personalities in recognition of their eminence and contribution to the profession of marine engineering. The IEI Young Engineers Award for 2021-22 in Marine Engineering Division was presented to Dr Karthikeyan Thandayutham, Post Doctoral Research Fellow, MaREI – SFI Research Centre for Energy, Climate and Marine Environmental Research Institute, University College Cork, Ireland (in absentia). For the year 2022-23, the Awards were presented to Mr Pratik Bose, Scientist, Vessel Management Cell, National Institute of Ocean Technology, Chennai and Dr Tapas Kumar Das, Research Fellow, Marine Research Group, Queen's University Belfast, Belfast, UK (in absentia). A Souvenir containing the abstracts of the papers presented during the National Seminar was released on the occasion in the august presence of the dignitaries. Er K Rama Mohana Rao, Organising

Secretary, 34<sup>th</sup> National Convention of Marine Engineers proposed the vote of thanks.

The Rear Admiral T B Bose Memorial Lecture was delivered by Dr V Bhujanga Rao on the theme of the National Seminar. In his lecture, Dr Rao mentioned that international trade holds the key to the nation's economic growth and maritime infrastructure provides the backbone for it. He outlined the Indian marine and oceanographic industry as a huge sector with primary focus on design, manufacture, assembly and evaluation of naval and commercial ships and underwater systems. Dr Rao emphasized on adoption of smart ships, advanced propulsion, new hull forms, state-of-art sensor systems, robotic systems, autonomous systems in terms of design, operation and maintenance.

A Panel Discussion was organized on the topic 'Futuristic Perspective of Marine Engineering for Self Reliance'.

Dr C P Ramanarayanan delivered the Keynote address on the topic 'Enhancing Effective Maritime Security using Machine Learning Techniques'. Dr G A Ramadass delivered Invited Lecture on the topic 'Challenges in Design of Submersibles'. V Adm DSP Verma, COM (Retd) delivered Invited Lecture on the topic 'Sustainable Shipping – Digital Ocean Construct'. Dr R Venkatesan, Council Member, IEI delivered Invited Lecture on the topic 'In-situ Measurements – Marine Atmospheric & Environmental Impacts'. Dr Ashokendu Samanta, Vice President, Indian Register of Shipping, Mumbai delivered Invited Lecture on the topic 'Role of Classification Societies in the Development of Maritime Technologies Towards Green Shipping'. Mr J Srinivasa Raju, CMD, Marine Dynamics Private Limited delivered Invited Lecture on the topic 'Industry's Perspective of Self Reliance in Marine Engineering Domain'. During the

technical sessions, papers were presented on diversified topics, namely 'Concept Design of Acoustically Stealthy Bio-mimicked Autonomous Underwater Vehicle'; Target Tracking of Autonomous Underwater Vehicle using a Neural Network Disturbance Observer'; Computation of Drag and Hydrodynamic Coefficients for an AUV using CFD'; Numerical Study on the Effect of Channel Depth on the Maneuverability of a Naval Combatant'; Numerical Investigation on Plate type Desiccant Coated Evaporative Cooler for Ships'; Nanomaterial Additives: A Novel Approach towards Abatement of Ship's Emission'; Cyber Risks and Security Measures Onboard Research Ships – Strategy for Mitigating the Evolving Threat'; Next Generation Battery Propulsion for Underwater Platforms'; Magnetic Signature Assessment and Analysis Eco System for Data Driven Stealth Ship Design'; Proposal for Strategic Extension of Ship Service Life for Strengthening Naval Defence Capability of the Nation'; The Importance of Indigenous Marine Sensors and Systems in Maritime Technologies; Ocean Current Induced Lateral Drift and its Influence on XBT Measurement; Underwater Optical Wireless Communication using Blue Green Laser; Experimental Investigation on the Effect of Stern Wedges on the Calm Water Resistance of High Speed Displacement Catamaran Hull Form; Experimental Investigations of Effect of Precorrosion on Fatigue Behaviour of Inconel 718; Ocean Thermal Energy Conservation towards a Clean Future; Fatigue Analysis and Life Estimation of Armoured Cable Interconnection for Underwater Applications; Investigation of Thermal Properties of Solar Nano Particles Reinforced with Red Brass MMC for marine Heat Exchangers and Filters; Free Vibration Analysis of Hybrid laminated Composite Plates using Experimental Model Testing; An Empirical Method combined with Experimental Technique for Reducing the overall time involved in Self Propulsion Test of a Ship Model; Indigenous Developments in Futuristic All Electric Propulsion using HTS Technology; Application of AR and VR in Shipping Industry; Study of Composite Propeller Coated with Nano Particles etc.

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## Advancement in Biofuels

Tamilnadu State Centre, IEI organized All India Workshop in association with Easwari Engineering College, Chennai on the theme **Advancement in Biofuels** during 18-19 August, 2022 under the aegis of Mechanical Engineering Division Board (MCDB), IEI at Chennai. Dr S Karuppasamy, Committee Member, Tamilnadu State Centre welcomed all. Dr S Sathiyamurthy, Head, Department of Automobile Engineering, Easwari Engineering College, Chennai welcomed the Chief Guest of the function, Dr P Shanmugam, Chief Scientist, Head & Professor – AcSIR, Environmental Science Lab, CSIR-Central Leather Research Institute, Tamilnadu and Guest of Honour, Dr R S Kumar, Principal, Easwari Engineering College, Chennai. In his address, Chief Guest, Dr P Shanmugam, explained the working principle of bio-fuel



and modified engine. Guest of Honour, Dr R S Kumar in his address, briefed about the scope for automobile engineers in renewable energy sector and motivated the students to come up with innovative ideas on green energy. Dr P Sarangapani, Assistant Professor, Automobile Engineering Department, Easwari Engineering College presented an overview of the workshop and the topics. The Keynote address was delivered by Dr S Prasanna Raj Yadav, Associate Professor, Department of Mechanical Engineering, SRM Easwari Engineering College, Chennai, on the topic 'Utilization of Potential Waste Resource for Hydrocarbon Fuel Extraction and Engine Application'. Dr Gulam Nabi Alsath, SSN College of Engineering delivered lecture on the topic 'Wearable Antennas in Biomedical Field'. Dr V Thanigaivelan, Assistant Professor–Senior Grade, Department of Mechanical Engineering, SRM Institute of Science and Technology, Ramapuram, Chennai delivered address on the topic 'The Importance of Biofuels in Future' and mentioned biofuel as a powerful resource for the future global development. Dr K.Swaminathan, Assistant Professor-Senior Grade, Department of Automobile Engineering, Easwari Engineering College, Ramapuram, Chennai delivered lecture on the topic 'Experimental Analysis of Jatropha Methyl Esteras - An Alternative Fuel in the CI Engine'. The Workshop helped the students, research scholars, faculty members and industry professionals to enrich their knowledge about the recent technological advancements about production and use of alternative for sustainable economic growth.

## From the President's Desk.....

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economy to bolster its energy security. India's recent release of its maiden Green Hydrogen Policy has triggered a wave of announcements from both private and state-owned companies about plans to establish projects that produce green hydrogen.

The objective of the National Hydrogen Mission is to scale up green hydrogen production and align India's energy transition efforts with global

best practices in technology, policy and regulation. The Mission aims to support the government's efforts in meeting climate targets and making India a green hydrogen hub.

With the observation of World Engineering Day for Sustainable Development on 4 March 2023 on the theme 'Engineering Innovation for a more Resilient World', engineers should come forward to deal with the impact of climate change and environmental issues and promote the advances of energy transition, decarbonisation and the adoption of green hydrogen economy in the country.

## Logistics and Supply Chain

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lecture on the topic 'SWOT Analysis on National Logistics Policy – 2022'. Dr Pankaj Kumar Sharma and Mr Manoj Kumar, Department of Electrical & Electronics Engineering, Rajshree Institute of Management & Technology, Bareilly, delivered lecture on the topic 'A Review on E-commerce Logistics in Supply Chain Management'. The speakers explained that the creation of new business models and stated that e-commerce is thriving and will continue to grow over the coming decades. A great number of businesses now engaged in E-commerce, which have significant impact on logistics; they added. The most recent developments in supply chain management's E-commerce logistics are presented from a practical standpoint; This study reviews international implementations, associated models, and supporting methodologies Opportunities and future perspectives are distilled from the real-world applications, so that emerging businesses, like e-commerce and logistics firms, are able to obtain purposeful direction, while thinking about business advancement, mentioned the speakers.

Mr K B Agarwal, Past Chairman, Bareilly Local Centre, IEI delivered his presentation on the topic 'Logistics and Supply Chain Management'. He explained that logistics and supply chain management help not only to reduce the company's overall production cost, but also improve the overall impression of the level of service. He further opined that right software also plays a significant role in optimizing logistic tasks. Dr Raveesh Agarwal, Mr Anuj Verma and Mr Pushkar Gangwar, Department of Business Administration, Rajshree Institute of Management & Technology, Bareilly deliberated on the topic 'Effects of Technology on Supply Chain Management

and Logistics'. Mr Pawan Agrawal, Entrepreneur & Business Consultant, Bareilly delivered lecture on the topic 'Logistics and Supply Chain Management', and explained that Supply Chain Management integrates management practices and information technology to optimize information and production flow among the processes and business partners within a supply chain. Mr Anuj Verma and Mr Suryakant Singh, Department of Civil Engineering, Rajshree Institute of Management & Technology, Bareilly, presented paper on the topic 'Applications of Big Data Analytics in Logistics and Supply Chain Management'. Mr Anshul Mishra, Department of Mechanical Engineering, SRMSCET, Bareilly presented lecture on the topic 'Building Resilient Global Supply Chains: The Geopolitics of the Indo-Pacific Region'. Mr Suryansh Singh and Mr Arpit Kumar Singh, Department of Mechanical Engineering, SRMSCET, Bareilly, presented paper on the topic 'Resource Scarcity Perceptions in Supply Chains'. Mr Suresh Chandra Sundrani, Director, Param Engineers Private Limited presented lecture on 'Innovative Methods in Logistics and Supply Chain Management: Current Issues and Emerging Practices' and deliberated on water scarcity, grey water treatment etc. Dr Sovan Mohanty, Department of Electronics and Communication Engineering, SRMSCET, Bareilly delivered his presentation on the topic 'An Introduction to Sustainable Supply Chain management and Business Implications'. A Souvenir was also released on the occasion on the dais in the august presence of Chief Guest and other dignitaries. Mr Navneet Prakash, Honorary Secretary, Bareilly Local Centre, IEI proposed the vote of thanks.

## Digital Image Processing and Image Correlation Techniques for Defect and Deformation Measurement

**Kattankulathur Local Centre, IEI**, in association with Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur organized All India Workshop on the theme **Digital Image Processing and Image Correlation Techniques for Defect and Deformation Measurement** during 20-21 October 2022 under the aegis of Mechanical Engineering Division Board (MCDB) at Kattankulathur. The aim of this Workshop is to bring together all the people who are currently working on or intend to learn basics of Digital Image Processing (DIP) and image correlation in the mechanical field of engineering especially defect detection. Dr N Arunachalam, Associate Professor, Department of Mechanical Engineering, IIT Madras graced the function as Chief Guest. Dr Arunachalam delivered lecture as the resource person on the topic 'Fundamentals of



Image Acquisition and the Applications of DIP' and explained significant aspects of surface texture analysis and its application in monitoring and control of precision machining and power spectrum. Dr R Senthil Nathan, SRM Institute of Science and Technology discussed MATLAB basics and demonstrated case studies about Image Acquisition and Applications of DIP; Application of strain gauges in tensile testing, Preparation of speckle patterns on the surface of the specimens, Correlation Algorithm and so on. Dr S A Krishnan and Mr R Nikhil, IGCAR, Kalpakkam spoke on Digital Image Correlation for deformation measurement, determination of strains, setting of reference images, loading of the sequence of images etc. The resource persons also provided practice problems to the participants and organized hands on practice session on Digital Image Correlation using NCorr software. Dr A Vijaya, Associate Professor, Department of Mechanical Engineering, SRM Institute of Science & Technology, Chennai demonstrated about the image acquisition in the Machine Vision system. Earlier, Prof (Dr) P T Ravichandran, Chairman, Kattankulathur Local Centre, IEI (session 2019-21) delivered the welcome address. Dr D Kingsly Jeba Singh, Professor and Chairperson, School of Mechanical Engineering; Dr M Cheralathan, Professor and Head, Department of Mechanical Engineering; Dr U Mohammed Iqbal, Professor, Department of Mechanical Engineering, SRM Institute of Science and Technology, Chennai, were present during the function and shared their views on the theme of the Workshop.

## Advances in Battery Technologies for Electric and Hybrid Vehicles

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life should be increased with enhanced safety; Prime importance should be given in design & development of battery technologies for reducing the charging time and also to increase the battery life with enhanced safety features; The efficiency of Battery Management System should be increased with a focus on improvements in Battery Thermal Management System; The range of EVs be enhanced by advancements in battery technologies; Awareness and actions be the year increased to meet the deadline to reduce CO<sub>2</sub> emissions and pollution by 2030; Purchase of EVs should be

encouraged by the Government and also by the manufacturers by providing affordable price of EVs; Large number of EV charging stations should be installed reduce the waiting time and ease of operations; The provision for exchange of battery is highly recommended to avoid waiting time for charging of the battery; The expertise for servicing of battery systems and the standard procedures for recycling the batteries be developed; All the technologies developed should be cost-effective and user friendly.

## Contemporary Developments in Maritime Technologies

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During the Valedictory Function, Vice Admiral Sreekumar Nair, Director General, Naval Projects, Visakhapatnam graced the occasion as Chief Guest. Dr B Venkataramana, Chairman, Visakhapatnam Local Centre [Session 2019-2021] presided over the function. Dr H N Das, Scientist G, NSTL, Visakhapatnam and Member, Technical Committee placed the recommendations emanated from the two-day deliberation during the national Convention, which are as follows.

There is a need to adopt Industry 4.0 principles, Artificial Intelligence, Machine learning, Cyber Security, Block Chain Technology, Digital Literacy, and soft skill for operating various degrees of autonomous vessels during the operations, maintenance, and training in maritime domains; Maritime training institutions need to revise and modify the course curriculum, so that the students have the upgraded knowledge of technological advancement in maritime sector. Practicals, Projects and Seminars should have an emphasis on AI, ML, and Block Chain related works; STCW Convention must consider the topics covered under points 1 and 2 in its forthcoming amendments. The syllabi of training institutes emerge from there; Maritime Institutions and Regulatory Bodies in India should project, promote, and propagate India-specific research, materials, technologies,

and policies. Any undue vested interests created by the market forces must be meaningfully countered at all levels especially at international forums to safeguard our national interests; Green energy concepts must be embraced to reduce marine environmental pollution. In this endeavor, alternative fuels and advanced protective coatings along with bio fuel management are to be explored and actively encouraged; Abatement of noise at sea due to various sources must be addressed and in particular, low-frequency noise which affects marine life is to be reduced; It is high time to re-organize a National Ship Design Bureau to establish indigenous design capacity and capability to reduce dependence on foreign expertise; A policy on the development and utilization of Autonomous Surface and Underwater Vehicles may be chalked out to synergize the efforts of all stakeholders in the country; Life extension of marine platforms, if necessary with required retro-fittings based on scientific data is to be explored as it could lead to huge savings. Older platforms in seaworthy operating condition can be continued in service for a long time avoiding the need to build more number of newer platforms; Capacity development of marine professionals on newer emerging technologies should be specially funded at the National level to support the national program on Blue Economy. Mr Rapeti Nageswara Rao, Honorary Secretary, Visakhapatnam Local Centre [Session 2022-2024] proposed the vote of thanks.

## Challenges in the Processing of Titanium Alloys for Defence, Aerospace and Marine Applications

**Tamilnadu State Centre**, IEI organized All India Workshop in association with Easwari Engineering College (EEC), Chennai on the theme **Challenges in the Processing of Titanium Alloys for Defence, Aerospace and Marine Applications** during 25-26 August, 2022 under the aegis of Mechanical Engineering Division, (MCDB) IEI at Chennai. The programme started with the welcome address delivered by Mr S Kannan, Chairman, Tamilnadu State Centre, IEI. Dr M Vetrivel Sezhian, Head, Mechanical Engineering Department, Easwari Engineering College introduced the Chief Guest of the function. Dr R S Kumar, Principal, SRM Easwari Engineering College welcomed the delegates and participants from various institutes and industries. Guest of Honour of the event was Mr R Ramdoss, Immediate Past Chairman, Tamilnadu State Centre, IEI. Dr M Pradeep Kumar, Professor and Head, Central Workshop, Anna University, Chennai delivered lecture on the topic 'Effect of Cryogenic Fluids on Machining of Titanium Alloys'. He explained biomedical applications and cryogenic machining of Titanium alloys. Dr V Thanigaivelan, Assistant Professor- Senior Grade, Department of Mechanical

Engineering, SRM Institute of Science & Technology, Ramapuram, Chennai spoke on the topic 'Titanium alloys for Defense and Marine Applications' and mentioned about the problems and challenges during the processing of Titanium Alloys. Mr R Arunavigneshwarana, Department of Mechanical Engineering, EEC delivered lecture on the topic 'Machining Parameter of EN 31 Steel in EDM Process'. Mr B Mithun Kanna, presented on the topic 'High Temperature Forming Behaviour of Titanium Alloy of Grade Ti-6Al-7Nb'. Dr A Giridharan, Associate Professor, Vellore Institute of Technology, discussed on the topic 'Machining of Titanium Alloys: Challenges and Opportunity' and explained the machining of Titanium Alloys for aerospace applications. Dr R Ramadoss, Professor, Department of Mechanical Engineering, EEC, Ramapuram, Chennai spoke on the topic 'Titanium Alloys for Biomedical Applications'. Dr K Kalaichelvan, Professor, Department of Ceramic Technology, Anna University, Chennai delivered lecture on the topic 'Super Plastic Forming and Sandwich Panels of Titanium Alloys'. In his address, he explained the concepts of super plasticity forming, sandwich panels etc and also explained about the structures of Titanium Alloy layer by layer for formation of sandwich panels. Mr M Raju, Research Scholar, Department of Mechanical Engineering, EEC, Chennai delivered address on the theme 'Mechanical Behaviour of Titanium alloys for Biomedical Applications'. In his lecture, he covered various types of Titanium and its mechanical properties for various biomedical applications. Mr B Kaarthikeyan delivered address on the theme 'High Temperature Tensile Behaviour of Titanium Alloy (Ti-6Al-7Nb) at 300 °C and 400 °C for Biomedical Applications'. In his speech, he highlighted the formability and tensile behaviour of Ti-6Al-7Nb at elevated temperature. The Workshop provided in-depth knowledge to the students, research scholars, faculty members and industry persons to face various challenges during the processing of titanium alloys for different industrial applications, including defense, automobile, aerospace, etc.



## One Day Seminar under the aegis of Aerospace Engineering Division Board

### Future Scope of Green Composites on Sustainable Product Development for Aerospace and other Industrial Applications

**Coimbatore Local Centre**, IEI, in association with the Department of Aeronautical Engineering, Hindusthan College of Engineering and Technology (HICET) organised One Day Seminar on the theme **Future Scope of Green Composites on Sustainable Product Development for Aerospace and other Industrial Applications** on 28 October 2022 at Coimbatore under the aegis of Aerospace Engineering Division Board [ASDB], IEI. The Seminar was inaugurated in the presence of Dr J Krishnamoorthi, Honorary secretary, IEI, Coimbatore Local Centre, IEI. Dr N Magudeshwaran, Dean of Academic Affairs, HICET in his address emphasized the need for sustainable product development for the socio economical welfare of the country and insisted the students to take up projects with environmental concern. Dr D Shanmugam, Associate Professor & Head, Department of Automobile Engineering, Dr Mahalingam College of Engineering and Technology, Pollachi delivered lecture on the topic 'Design of Natural Fiber Reinforced Composites for Moisture Environment' explained the role of green composites in developing eco-friendly products and availability of natural fibres in Coimbatore region. Dr C Sabarinathan, Head of the Department, Department of Automobile Engineering, HICET delivered lecture on the topic "Role of Green Composites in Aerospace and Automotive Applications" in which he explained the advantages and limitations of natural fibre reinforced composites for external applications. Dr S Venkatachalam, Associate Professor, Department of Aerospace Engineering, Karunya University presented his research work in the area of 'Fatigue and Damage Tolerance



of Composites' and discussed fatigue characteristics, failure modes and fail safe design of the composites. Dr S Venkatachalam, Associate Professor, Department of Aerospace Engineering, Karunya University delivered lecture on the topic 'Fatigue and Damage Tolerance of Composite Materials'. Papers were presented on the topics 'Fabrication and Characterization of Ceramic Reinforced Aluminium Matrix Composite; The Thermo - mechanical Behaviour of Glare Laminates for Aircraft Engine Cowling; Effect of Water Absorption on Mechanical Properties of Natural Fibers, Reinforcement Composites and so on. Earlier, Dr V T Gopinathan, Associate Professor, Department of Aeronautical Engineering, HICET briefed the audience about the theme. Dr J Krishnamoorthi, Honorary Secretary, Coimbatore Local Centre, IEI proposed the vote of thanks.

## Role of Mechanical Engineers in Missile Systems

Jabalpur Local Centre of the Institution organized Technical Webinar on the theme **Role of Mechanical Engineers in Missile Systems** on 07 August, 2022 under the aegis of Mechanical Engineering Division Board [MCDB], IEI through online mode. Panelists of the event were Dr Y Shrinivas Rao, Director, Naval Science and Technological Laboratory, Visakhapatnam; Dr Enti Ranga Reddy, Chairman & Managing Director, Legend Technologies, India Private Limited, Bangalore & Chairman, Mechanical Engineering Division Board [MCDB], IEI and Dr Biplab Paul, Vice Chancellor, Sardar Patel University, Balaghat. Moderator of the event was Brigadier Vipin Trivedi. The webinar started with the welcome address delivered by Mr Prakash Chandra Dubey, Chairman, Jabalpur Local Centre, IEI. He welcomed the honourable guests, speakers, audience, participants and provided a brief introduction to the event. Dr Enti Ranga Reddy in his address stated that the Mechanical and Aeronautical



Dr Y Shrinivas Rao

Engineers with their joint effort, developed unique resources. He stated that ongoing research in aerospace and mechanical engineering is delving deeper into the realm of thermodynamics and structural mechanics, with the aim of uncovering new avenues for exploration. He added that research is currently underway in a range of fields including climate modeling, experimental fluid mechanics, fixed-wing aircraft design, laser-based advanced manufacturing, human-robot interaction, remote sensing of environmental flows, and several others.

Dr Y Srinivas Rao in his lecture focused on the application of mechanical engineering concept in intelligent systems, automotive systems interface and said that the knowledge base of a well rounded engineer contains multiskills combined with talent, ability, interest and ambitions. He spoke on the advancement of missile systems, challenges in missile innovation, missile system design, flight control measures, propulsion system design, airframe system design, aircraft insulation, guided missile technology and explained the scope of mechanical engineering in missile structure, instrumentation, navigation, ballistic missiles etc. Dr Rao discussed on layered defence engagement phases, design and positioning of launchers, radars, interception of missile systems, design of ballistic trajectory locus and the role of mechanical engineers in the related field. He elaborated

further India's competitiveness in manufacturing. Dr Rao concluded his lecture on aerospace manufacturing with an optimistic outlook, highlighting the potential for rapid advancements through collaboration among industry, academia, and research and development (R&D) sectors.



Dr Enti Ranga Reddy

Dr Enti Ranga Reddy in his lecture discussed briefly on the missile systems, role of mechanical engineers in designing missile systems, including planning, computational simulation, performance analysis, development of tooling, machining, fabrication, development of prototype for testing, quality assurance of the finish product etc. He further stressed on digitalized performance engineering approach and use of advanced technologies; use of multidisciplinary data to create digital twin; leveraging single 3D CAD and CAE environment to generate high resolution models and subsequently investigate missile stability at different operational points.



Dr Biplab Paul

Dr Biplab Paul mentioned the role of mechanical engineers in the fabrication of missile structure, high precision manufacturing of missile components, selection of material of construction based on wind velocity, changing atmospheric pressure, frictional resistance, temperature etc. He discussed the crucial role of mechanical engineers in designing various components of a jet engine, including the fuel system, propulsion system, insulation system, and the guidance system for missiles, among others.



Brigadier Vipin Trivedi

Moderator of the session, Brigadier Vipin Trivedi summed up the proceedings of deliberation. An interactive session was organized and the participants raised number of queries related to this event. Mr Sanjay Kumar Mehta, Honorary Secretary, Jabalpur Local Centre, IEI was present on the session. Mr Prakash Chandra Dubey, Chairman, Jabalpur Local Centre, IEI proposed the vote of thanks.

## Sustainability Opportunities and Challenges for Electric Vehicles towards Energy Transition in India

West Bengal State Centre, IEI organized Technical Webinar on the theme **Sustainability Opportunities and Challenges for Electric Vehicles towards**



Mr Souvik Bhattacharjya

**Energy Transition in India** on 12 October 2022 under the aegis of Mechanical Engineering Division Board [MCDB], IEI. Panelists of the event were Mr Souvik Bhattacharjya, Associate Director and Senior Fellow at the Resource Efficiency and Governance Division, The Energy & Resources Institute (TERI) and Mr Bhaskar Dutta, Business Consultant and Convenor, Mechanical Engineering Division, West Bengal State Centre, The Institution of Engineers (India). The

session was moderated by Mr Anirban Datta, Joint Honorary Secretary, West Bengal State Centre, IEI. The event started with welcome address delivered by Dr Nirmal Das, Chairman, West Bengal State Centre, IEI. Mr Sandip Kumar Deb, Vice President, IEI [Session 2021-22] was present on the session and addressed the august audience. Dr Enti Ranga Reddy, Chairman, Mechanical Engineering Division Board [MCDB], IEI mentioned that electric transportation offers ideal opportunities for the broader introduction of renewable to the transport sector. As energy-consuming



Mr Bhaskar Dutta

technologies, electric vehicles create new demand for electricity that can be supplied by renewable. Electric vehicles provide the opportunities to link the renewable power and low-carbon transport sectors; It represents great opportunity in the de-carbonization scenario that has double impact: increase the use of renewable energy in mobility sector and support the massive diffusion of renewable energy sources on a distribution network, Dr Reddy added further.

Dr Bhattacharjya commenced his lecture with the road transport and environmental linkages. He spoke on transportation emission in India, the imperative for an integrated sustainable assessment of different fuel technologies and explained the Life Cycle Analysis for sustainability assessment of fuel throughout its entire life cycle. He explained the Life Cycle Assessment framework as a time tested assessment technique that evaluates environmental performance throughout the life



Mr Anirban Datta

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# IEI Celebrates Energy Conservation Day

The Energy Conservation Day was celebrated by the Institution on December 14, 2022. Brief accounts of celebration as received from various Centres are reported hereunder.

## STATE CENTRES

### Assam



Assam State Centre, IEI observed Energy Conservation Day 2022 on 14 December 2022 at Guwahati. Dr Plabon Bora, Assistant Professor, Assam Science & Technology University, Guwahati,

presented the thematic lecture. Mr Nripendra Nath Patwari, Chairman, Assam State Centre, IEI presided over the session and Mr Pulak Sarmah, Honorary Secretary, Assam State Centre, IEI introduced the speaker. At the end, Dr Milanjit Bhattacharyya, Joint Honorary Secretary, Assam State Centre, IEI proposed the vote of thanks.

### Andhra Pradesh

Andhra Pradesh State Centre, IEI, in association with PSCMR College of Engineering & Technology observed Energy Conservation Day 2022 on 16 December, 2022 at Vijayawada. Speaker of the event, Mr D Krihsna Sastry, CEO, Visual Comfort discussed Dual or Hybrid technology, Motion Sensor Technology, candlepower distribution, spectral power distribution, luminaire (light fixture) and IESNA. Dr K Hemachandra Reddy, Chairman, Andhra Pradesh State Centre, IEI [Session 2019-2021] discussed about energy consumption in different countries. Prof (Dr) Venkata Sriram Chinthamani, Honorary Secretary, Andhra Pradesh State Centre, IEI [Session 2019-2021] discussed the role of present generation in saving energy and proposed the vote of thanks.



### Jammu and Kashmir



Jammu and Kashmir State Centre, IEI observed Energy Conservation Day 2022 on 24 December 2022 at Srinagar. A Seminar was organized on the theme 'Solar Power – The Future'.

The Seminar started with the introduction of theme by Mr Ferdous Ahad Bhat, Honorary Secretary, Jammu and Kashmir State Centre, IEI. Dr Raof Ahad Khan, Chairman, Jammu and Kashmir State Centre, IEI delivered the welcome address. Chief Guest of the event was Dr Rakesh Sehgal, Director, NIT Srinagar and Guest of Honour was Mr Bashir Ahmad Dar, Former Secretary Technical, JKPPD. Speakers of the event were Mrs M Aaqib Sultana Waheed Deva, Superintending Engineer (Electrical); Mr Junaid Akhtar, Assistant Engineer, JKSPDC; Mr Khalid Raja, Assistant Engineer, JAKEDA; Mr Aadil Hassan, Junior Engineer, JKPPD; Mr Aqib Ahmad, Government College of Engineering and Technology, Kashmir and Mr Yasir Khan, Government College of Engineering and Technology, Kashmir.

The speakers discussed about interdependence of renewable resources, shortage of conventional energy, understanding the need for optimization of existing infrastructure, potential solutions, performance and impact analysis, grid connected to solar rooftop systems and installation of solar pumps in Jal Shakti Department, etc.

### Jharkhand

Jharkhand State Centre, IEI observed Energy Conservation Day 2022 on 14 December 2022 at Ranchi. Mr Mohammad Iqbal Alam, Chairman, Jharkhand State Centre, IEI welcomed the guests



and dignitaries of the event. Chief Guest of the event, Mr Bijay Kumar Sinha, Project Director, JREDA, Ranchi emphasized the need of energy conservation at rural level and explained the initiatives by the Government of Jharkhand to promote solar energy and energy saving like Solar Roof Top Scheme, Solar Water Pump Set Kusum Scheme, Solar Hot Water System and Solar Street Light Scheme. Guest of Honour of the event, Mr C Pramod, GM (E&M), CCL Ranchi delivered 3p's principle, (People, Profit and Plant) to minimize the use of fossil fuel. Keynote Speaker of the event, Mr Subhas Biswas, GM (E&M), CMPDI Ranchi emphasized on using more BEE certified equipment for energy conservation. Speakers of the event, Mr Atul Nigam, Energy Expert, Jharkhand Renewable Energy Development Agency, Ranchi and Mr Atilesh Gautam, SDA In-charge, JREDA explained the role of BEE in energy conservation. At the end, Mr M R Kumar, Past Honorary Secretary, Jharkhand State Centre, IEI proposed the vote of thanks.

### Punjab & Chandigarh

Punjab & Chandigarh State Centre, IEI observed Energy Conservation Day 2022 in virtual mode on 14 December 2022. Chief Guest of the event, Dr Jotinder Singh, Former Engineer-in-Chief, Punjab State Electricity Board emphasized judicious use of energy, energy efficient technologies and adopting renewable energy to save energy and our mother Earth. Keynote speaker of the event, In his lecture, Mr Awanish Kumar Shukla, Chief Engineer (E), BSNL Punjab emphasized the significance of energy conservation and efficiency. He also discussed the various energy-saving measures that can be implemented in commercial and industrial establishments, buildings, agriculture, and domestic sectors. Earlier, Dr Labh Singh Bhari, Chairman, Punjab & Chandigarh State Centre, IEI welcomed the participants. At the end, Mr Swinder Singh, Honorary Secretary, Punjab & Chandigarh State Centre, IEI, extended the vote of thanks.

### Tripura

Tripura State Centre, IEI observed Energy Conservation Day 2022 on 14 December 2022 at Agartala. A Seminar was organized on this occasion



on the topic 'Energy Conservation and Energy Efficiency'. Guest of Honour of the event was Mr Debasish Sarkar, Managing Director, Tripura State Electricity Corporation Limited,

Agartala and Special Guest of the event was Mr Debabrata Sukladas, Joint Director, Tripura Renewable Energy Development Agency. Special Speaker of the event, Ar Dhaval Karwa, Project Officer, ECBC Cell, Tripura delivered lecture on the topic 'Energy Efficient Building through Energy Conservation Building Code'. Ar Karwa in his lecture encompassed various parameters affecting the building physics and thermal comfort issues for energy efficient building. Special Speaker, Dr Shailendra Singh, Assistant Professor, Department of Electrical Engineering, NIT Agartala delivered lecture on the topic 'Energy Conservation Opportunities in Power Distribution System' and spoke on various energy saving schemes like demand side management, losses minimization techniques and optimal allocation of distribution of energy resources. Mr Sagar Mallik, Department of Electrical Engineering, NIT Agartala spoke on 'Plugin energy efficient hybrid electric scooty'. Dr Subhadeep Bhattacharjee, Chairman, Tripura State Centre, IEI presided over the programme. Earlier, Dr Mrinal Kanti Deb Barma, Honorary Secretary, Tripura State Centre, IEI presented the welcome address.

### Uttar Pradesh



On 14 December 2022, Uttar Pradesh State Centre, IEI observed Energy Conservation Day 2022 at Lucknow. Chief Guest of the event, Mr Yogesh Kumar, Director (Commercial), Madhyanchal Vidyut Vitaran

Nigam Limited (MVVNL) (UP Power Corporation Limited) emphasized the need of energy conservation and mentioned about the misuse of electrical energy by common people. Earlier, Mr Masarrat Noor Khan, Chairman, Uttar Pradesh State Centre, IEI welcomed the guests and stressed on energy conservation by replacing non-renewable energy resources with renewable sources. Convenor of the event was Mr S K Verma, Former Managing Director, Power Corporation. At the end, Mr R K Trivedi, Immediate Past Chairman, Uttar Pradesh State Centre, IEI proposed the vote of thanks. A large number of engineers from various departments participated in the event.

## LOCAL CENTRES

### Aligarh



On 14 December 2022, Aligarh Local Centre, IEI observed Energy Conservation Day 2022 at AMU, Aligarh. The programme commenced with lighting the lamp and

felicitating the Chief Guest of the event, Prof M M Sufyan Beg, Principal, Z H C E T, Aligarh Muslim University, Aligarh and Guest of Honour of the event, Prof Mohammad Rihan, Member-in-Charge, Electricity, AMU, Aligarh. Dr (Mrs) Salma Shaheen, Chairman, Aligarh Local Centre, IEI delivered the welcome address and introductory remarks. Prof M M Sufiyen Beg shared his views about the importance of energy conservation and the need to explore alternate sources of energy. Guest of Honour of the event, Prof Mohammad Rihan delivered a lecture on the topic 'Conservation of Energy' and emphasized on the relevance of energy conservation in terms of climate concerns and increasing temperature. At the end, Mr A A Zaidi, Convenor of the programme proposed the vote of thanks.

### Alwar

Alwar Local Centre, IEI observed Energy Conservation Day 2022 in association with Jaipur Vidyut Vitran Nigam Limited, Alwar on 14 December 2022 at Alwar. Chief Guest of the event was Mr J L Meena, S E, Jaipur Vidyut Vitran Nigam Limited (JVVNL). Mr Ashok Kumar Gupta, Chairman, Alwar Local Centre, IEI delivered the welcome address. Mr Meena expressed



his views about the theme and requested for more seminars, technical talks to be conducted in collaboration with IEI & JVVNL. Special Guest of Honour of the event, Mr Ashish Jaiman, Director – Microsoft, USA discussed

on de-carbonization, decentralization, digitalization of power along with vehicle on grid, virtual energy networks and electrical vehicle charging solutions. Keynote Speaker of the event, Mr Subhash Chandra Joshi, Immediate Past Chairman, Alwar Local Centre, IEI spoke on uses of various sustainable power sources like tidal, biomass, geothermal energy and energy saving techniques.

### Coimbatore

Coimbatore Local Centre, IEI observed Energy Conservation Day 2022 in association with Indian Green Building Council Students' Chapter and PSG College of Technology on 22 December 2022 at Coimbatore. Guest Speaker



of the event, Dr S R Sivarasu, Managing Partner, Ram Kalam - Centre for Energy Consultancy and Training, Coimbatore delivered lecture on the topic 'Energy Conservation – A Collective Responsibility' and discussed about the need of energy conservation, energy & environment, energy conservation starting point, residential energy system and environment preservation. Earlier, Mr P R Natarajan, Immediate Past Chairman, Coimbatore Local Centre, IEI welcomed the gathering and delivered the goal of Energy Conservation Day. At the end, Dr H Ram Mohan, Immediate Past Honorary Secretary, Coimbatore Local Centre, IEI proposed the vote of thanks.

### Dharwad



Dharwad Local Centre, IEI observed Energy Conservation Day 2022 on 14 December 2022 at Dharwad. Chief Guest of the event, Mr Arun Nadiger, Chief Engineer (Retd), Karnataka Power Corporation discussed the

metered & unmetered consumption of energy. He presented the road map regarding growth of generating capacity (MW) in India in thermal, hydro and renewable energy sector. He further stressed on adopting energy saving measures, which include installation of solar PV panels, use of electric vehicles etc. Mr Vijaykumar Hanamantappa Totiger, Chairman, Dharwad Local Centre, IEI presided over the function. Prof Shravan Nayak, Assistant Professor, Electrical and Electronics Engineering Department, S D M College of Engineering and Technology, Dharwad; Mr Ravi S Doddamani, Chief Engineer (Retd), Karnataka Power Corporation and Prof M K Marikatti, Assistant Professor, Mechanical Engineering Department, S D M College of Engineering and Technology, Dharwad addressed the audience. Mr S S Kerur, Honorary Secretary, Dharwad Local Centre, IEI was present on the dais and shared his views.

### Durgapur

Durgapur Local Centre, IEI observed Energy Conservation Day 2022 in Durgapur on December 14, 2022. In the beginning, Mr Manas Majumder, Honorary Secretary, Durgapur Local Centre, IEI delivered the welcome address and mentioned that this Day is observed on December 14 every



year as India's commitment to clean energy and combating change. Chief Guest of the event, Mr Trarun Kumar Ghosh, Chief Operating Officer, Mining Anusandhan delivered

lecture on World Energy Conservation Day and emphasized the need for research and development of alternate energy sources, which are affordable, available in adequate quantity, and perennial in nature. He stressed the need of energy conservation to meet up the economical use of energy basically its features of universal usage, a fast depleting resources, and impact on climate change. Keynote speaker of the event, Mr Pratap Kumar Khatua, DGM (Power Management), SAIL, Durgapur Steel Plant delivered presentation on the topic 'Energy Conservation – the Road Ahead'. Mr D Banerjee, Committee Member, Durgapur Local Centre, IEI discussed on energy conservation, climate change, global warming etc. At the end, Mr Manas Majumder proposed the vote of thanks.

### Ghaziabad

Ghaziabad Local Centre, IEI observed Energy Conservation Day 2022 on 23 December 2022 at Ghaziabad. Chief Guest of the event, Dr Arindam Basu, Director General, NITRA; Chairman, Textile Division (BIS), New Delhi; and Chairman, Technical Committee for Textile Industry (BEE) explained energy conservation as the decision and practice of using less energy. Guest of Honour of the event, Mr Sourabh Jain, Assistant Professor (EC)-NITRA suggested for using lesser energy, to save the environment with significant changes by way of global warming and climatic changes. Keynote Speaker of the event was Mr R R Tanwar, Council Member, IEI. Mr S C Gupta, Past Honorary Secretary, Ghaziabad Local Centre, IEI explained about the theme of the Day. At the end, Mr Ashok Kumar, Honorary Secretary, Ghaziabad Local Centre, IEI proposed the vote of thanks.



### Gwalior

On 14 December 2022, Gwalior Local Centre, IEI observed Energy Conservation Day 2022 at Gwalior. Speakers of the event were Mr Vivek Khandelwal, AI Computer Engineer, Mr Rajendra Singh Sikarwar, CEO-IT and Digital Marketing and Mr Vinay Kumar Shukla, Manager, NFL. Earlier, Mr Radha Kishan Khetan, Chairman,



Gwalior Local Centre, IEI delivered welcome address and emphasized the need and benefits of IEI membership and mentioned the activities of IEI. Mr Rajendra Singh Kushwah, Organising Secretary of the event proposed the vote of thanks.

### Jamshedpur

Jamshedpur Local Centre, IEI observed Energy Conservation Day 2022 on December 14, 2022 through virtual mode. The programme started with the welcome address delivered by Prof (Dr) Anil Kumar Choudhary, Professor, NIT, Jamshedpur, and Past Honorary Secretary, Jamshedpur Local Centre, IEI. Speaker of the event, Mr Dinesh Kumar Prasad, Ex-Head Project, Tata Steel, Jamshedpur presented lecture on the topic 'Energy Conservation and Impact and Initiatives of Energy Conservation'. At the end, Mr Shanti Das Bhattacharjee, Honorary Secretary, Jamshedpur Local Centre, IEI proposed the vote of thanks.

### Kancheपुरam



Kancheपुरam Local Centre, IEI, in association with St Joseph College of Engineering, Sriperumbudur, Chennai observed Energy Conservation Day 2022 on 16 December 2022 at

Chennai. A Seminar was organised on the topic 'Energy Conservation and Importance of Renewable Energy'. Chief Guest of the event, Dr L P Siva Kumar, Professor, Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai stated the importance of Energy Conservation and on sustainability of natural resources. He advocated the need to observe National Energy Conservation Day, a day aimed at creating awareness about the effects and causes of energy consumption in the country. He also emphasized the importance of the Day in promoting the sustainable use of natural resources. Students participated enthusiastically throughout the session. Dr G Shanmugasundar, Honorary Secretary, Kancheपुरam Local Centre, IEI was also present in the function.

### Kanyakumari

Kanyakumari Local Centre, IEI observed Energy Conservation Day 2022 in association with Stella Mary's College of Engineering, Azhikkal, Kanyakumari on 14



December, 2022. Chief Guest of the event was Dr M Marsaline Beno, Dean Research, St Xavier's Catholic College of Engineering. Guest of Honour of the event was Dr S Arumuga Perumal, Chairman, Kanyakumari Local Centre, IEI. Dr M Marsaline Beno in his address explained the need of energy conservation by means of saving the depleting fossil fuel, protect the environment from pollution etc. Dr Perumal in his address mentioned that energy conservation is the design and practice of using less energy. Mr S Natarajan, Honorary Secretary, Kanyakumari Local Centre, IEI in his address stated that in future, water and energy are going to play the lead role in global sustainable development. Dr R Suresh Premil Kumar, Principal, Stella Marys College of Engineering also addressed the audience.

### Kota

On 14 December 2022, Kota Local Centre, IEI observed Energy Conservation Day 2022 at Kota. Chief Guest of the event was Mr U C Sharma (Retd),



Chief Engineer, (Kota Super Thermal Power Plant (KSTPS), and Key Speaker of event was Mr Pradeep Arya, Executive Engineer, RRVUNL Chhabra. The welcome address was

delivered by Mr Devendra Kumar Bhargava, Chairman, Kota Local Centre, IEI. Mr U C Sharma, in his address focussed on the prevention of energy loss due to heat radiation and electric resistance. He explained the radiation loss in high temperature zones, electrical loss in the distribution lines etc. Mr Pradeep Arya, in his address stressed on electrical safety, importance of electrical safety training and its methodology, energy conservation guidelines for industries etc. At the end, Mr Shyam Lal Gupta, Honorary Secretary, Kota Local Centre, IEI proposed the vote of thanks.

### Udaipur

Udaipur Local Centre, IEI observed Energy Conservation Day 2022 on 14 December 2022 at Udaipur. Mr Chandra Prakash Jain, Chairman, Udaipur Local Centre, IEI welcomed the Chief Guest of the event, Prof B P Sharma, Group President, Pacific University, Udaipur; Speaker of the event, Prof



Naveen Kumar, Head, Mechanical Engineering, Sir Padampat Singhania University (SPSU), Udaipur and the dignitaries present in the function. Prof B P Sharma in his address emphasized the use of

hydrogen fuel cell technology and advocated for using minimum natural resources for minimum carbon footprint emission. Prof Naveen Kumar stressed on reducing energy usage without affecting the quality and quantity of production. He emphasized the need for capacity addition in production to meet the increasing demand, which requires capital and time investment. Dr Ritesh Tirole, SPSU explained about the activities of CSES on energy conservation at Singhania University. Mr Chandra Prakash Jain elucidated the institution's activities and emphasized the importance of collaboration between renewable energy and industry-academia to achieve a better and more sustainable future. On this occasion, an exhibition on energy-saving devices was organized at Sir Padampat Singhania University campus. Mr Purushottam Paliwal, Honorary Secretary, Udaipur Local Centre, IEI

expressed his views on energy conservation and at the end, proposed the vote of thanks.

### Warangal

On 14 December 2022, Warangal Local Centre, IEI, in association with Greater Municipal Corporation, Warangal, observed the Energy Conservation



Day 2022 at Warangal. Chief Guest of the event, Prof K Kiran Kumar, NIT Warangal explained the importance of energy conservation in our daily life. Mr Pendli Upender Reddy, Honorary Secretary, Warangal Local Centre, IEI shared his views on energy

conservation. Mr M Sambaiah, Chairman, Warangal Local Centre, IEI explained the need of energy conservation and suggested the roadmap to make the Warangal Smart City. Mr R Raghavulu, Past Chairman, Warangal Local Centre, IEI emphasized the need of interaction with field level staff for various utility services of the Corporation for maximum benefits.

## Sustainability Opportunities and Challenges for Electric Vehicles towards Energy Transition in India

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cycle of a product or performing a service. He explained Life Cycle Impact Assessment and mentioned that for each stage of Product Life Cycle (PLC), emission data in the environment and resources used are collected, which is termed as Life Cycle Inventory (LCI). He further explained the stages of life cycle of power train technologies, compared the key impact parameters of electric vehicles and IC vehicles, the possible factors that lead to the variation and the mitigation strategies towards making the road transport

truly sustainable. Dr Bhattacharjya spoke on global warming potential, GHG emission scenario, impact indicators, emerging challenges to shift to the electric vehicles and opined that electrification of road transport can reduce NO<sub>x</sub>, PM 2.5 and improve the air quality. An interactive session was organized at the end of the session. Moderator of the session, Mr Anirban Datta summed up the proceedings of deliberation and at the end of the event, proposed the vote of thanks.



## Project Management Associates Weekend Programme



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- Cheque / draft or NEFT is payable to "Project Management Associates" at Delhi.
- The registration fee does not include travel and hotel accommodation.

Next batch of on-line learning sessions on Project Management Competence Building (PMCB) based on ICB Version 4, knowledge base for IPMA Level C and Level D by our Learning partner PMA is from **3, 4, 10, 11 March 2023**. The relevant material is available in the link <https://www.pma-india.org/brochures>.

**Exam Dates for Level C:** 18, 24, 25 March 2023

**Exam Dates for Level D:** 18 March 2023

**Exam Venue:** Secure and Seamless Online Exam & Assessment

### For more details, please contact:

Arvind Agarwal, Head, PMA Cert (Certification Body)

Project Management Associates

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Tel: 011 41421511 Mob: +91 9711631534-35/39, 9840432229, Website: [www.pma-india.org](http://www.pma-india.org), Email: [info@pma-india.org](mailto:info@pma-india.org) /

# News-in-Brief

The following are the brief account of Technical Activities organised by various Centres

## STATE CENTRES

### Andhra Pradesh

Observed the birthday of Dr K L Rao on 15 July 2022 at Vijaywada. Dr C V Sriram spoke about the legacy of Dr K L Rao. Mr Alapati Prasad in his address mentioned Dr K L Rao as the Father of Irrigation and added that Dr Rao was the designer of Nagarjunasagar and Bhakra Nangal dams.

### Goa

Organized the World Telecommunication and Information Society Day in association with Government Polytechnic Panaji on 17 May 2022 at Goa on theme 'Digital technology for Older Persons and Healthy Ageing'. Chief Guest of the event was Dr R B Lohani, Principal, College of Engineering, Goa. Guest of Honour of the event was Mr L R Fernandes, Principal, Government Polytechnic Panaji. Keynote Speaker of the event, Mr Deepak Chodankar, Director (Technology), WisdomLab Synergies Limited, Verna, Goa and Director, Ingenious Consultants expressed his thoughts on the health of youth, ageing people, affordable healthcare, financial freedom, health status monitoring, AI and robotics, etc.

### Karnataka

Organized the 11<sup>th</sup> Prof Satish Dhawan Commemoration Lecture on the topic 'Satish Dhawan: A Great Researcher and Administrator' on 26 September 2022 through hybrid mode. Keynote Speaker of the event, Dr B N Suresh, Chancellor, Indian Institute of Space and Technology, Trivandrum; President, Indian Academy of Engineering, New Delhi; Honorary Distinguished Professor, ISRO HQ. remembered Prof Satish Dhawan as a multifaceted personality, great mathematician, eminent aerospace scientist, excellent teacher, hardcore technologist, outstanding researcher and a very good human being. He mentioned that Prof Dhawan gave greater thrust during his tenure to space applications including rural education, remote sensing and satellite communication for the development of the country.

### Kerala

Organized technical talk in association with IEEE, CSI, INSARM, ASI, SSI, ISTD, SAME, IITArb, PMI, IETE on the topic 'Advanced Materials Used in Launch Vehicles and Satellites: An Overview' on 28 September 2022. Speaker of the event was Dr P Ramesh Narayanan, Group Director (Retd), Materials and Metallurgy Group, VSSC.

Organized 28<sup>th</sup> Er S K Sundram Memorial Lecture on 24 October 2022 at Thiruvananthapuram. Speaker of the session, Dr R Murukesan, Former Chief Engineer, Kerala PWD delivered lecture on the topic 'Strong and Wise Decisions of Engineers create Strong and Useful Structures'.

### Telangana

Organized webinar on the topic 'Global Warming and Climate Change' on 10 August 2022. Speaker of the event was Mr G Hariharan Iyer, President, Indian Association of Energy Management Professionals, Hyderabad.

Organized Prof (Dr) S Raghavachary Eighth Endowment Lecture on the topic 'Design and Evaluation of Concrete Pavements' on 15 August 2022 through online mode. Speaker of the session, Dr K Sudhakar Reddy, Professor,

Department of Civil Engineering, Indian Institute of Technology Kharagpur while speaking on the occasion mentioned that the concrete pavements typically have a layer of concrete with a combination of different foundation layers. He further explained different foundation layers, which include bituminous layers, emulsion/foam treated base layers, unbound granular bases and sub-bases, embankment layers, etc.

Organized a technical Talk in association with Telangana Retired Engineers' Association on 'Sustainable Village Development' on 19 August 2022 at Hyderabad. Mr V Prakash Rao, Chairman, TWRDC & IPRBC addressed the gathering as the Chief Guest. Padma Shri Papat Rao Baguji Pawar, Change Maker of Rural India, also addressed the gathering.

Organized Er Gurram Koti Reddy Fourth Endowment Lecture on the topic 'Environmentally Friendly and Cost-effective Wastewater Treatment System' on 23 September 2022 at Hyderabad. Chief Guest of the event, Mr Ramasahayam Surender Reddy, Former Member of Lok Sabha released the Book of Biography of Er Gurram Koti Reddy and addressed the august audience. Dr Sravan Banda, Director, BlueDrop Enviro Private Limited delivered lecture on the topic.

Organized Er Atluri Venkateshwara Rao 15<sup>th</sup> Endowment Lecture on the topic 'Recent Trends in Electrical Engineering and Adoption in Industry' on 28 September 2022 through online mode. Speaker of the event was Mr B Koti Reddy, Scientific Officer, Department of Atomic Energy, Government of India.

### Tripura

Organized Technical Talk on 'An Overview of Thermal Power Plant Operations, Maintenance and Sustainability Issues' on 24 November 2022 at Agartala. Speaker of the event was Mr Ashokranjan Ray, Former Director, National Aluminium Company Limited. Mr Jiten C Das, General Manager, Agartala Gas Based Power Station, North Eastern Electric Power Corporation Limited (NEEPCO), R K Nagar, Tripura graced the occasion as Special Guest.

### West Bengal

Organized Seminar on the topic 'Rare Earth and in Nuclear Applications' on 27 July 2022 at Kolkata. Guest of Honour of the event, Dr R Bhima Rao, Geo Scientist and Council Member, IEI delivered lecture on the Seminar theme and discussed about Nuclear Power and its Applications. He discussed rare earth elements which are rich in the isotopes, stable and unstable isotopes and mentioned that lanthanide isotopes are of particular interest to nuclear scientists due to the rich field for testing theories about the nucleus, especially because many of these nuclei are not spherical, a property that has a decided influence on nuclear stability. The unstable radioactive isotopes are produced through fission, neutron bombardment, and radioactive decay of neighbouring elements and bombardment of neighbouring elements with charged particle, he added.

Organized Seminar on the topic 'High Performance Concrete for 21<sup>st</sup> Century' on 28 July 2022 at Kolkata. Guest Speaker of the event, Prof (Dr) Somnath Ghosh, Ex-Dean, Faculty of Engineering and Technology, Jadavpur University explained the basics of concrete behaviour and mentioned the industrial requirement and innovation required for material.

He recommended that we make conceptual modifications to improve the quality audit process, and emphasized the importance of thorough testing and supervision to ensure that the changes are effectively implemented.

Organized the Late Haridas Nandy Memorial Lecture on 05 August 2022 at Kolkata. A Seminar on 'Impending Paradigm Shift in Engineering Science and Technology: Future Challenges' was organized on this occasion. During the seminar, Professor (Dr) N R Bandyopadhyay, Speaker of the event and faculty member at IEST Shibpur, paid a solemn tribute to the late Haridas Nandy. He then delivered a thought-provoking lecture on the seminar's topic, leaving a lasting impression on the audience. He discussed briefly about the paradigm shift and mentioned the need of paradigm shift and status in current science and technology. He opined that Nano Technology can put the power of creation into human hands – NANO vs BULK. He further elaborated silicon and electronics; mineralization increase in level of integration; green house gases and green house effect; natural oscillation of global temperature and astronomical effect; melting of glacier; Fuel cell research, Hydrogen economy; Carbon dioxide recycle with ethanol fuel and characterization etc. He concluded his speech stating 'The agents of change are driving a new paradigm shift today'.

## LOCAL CENTRES

### Ahmednagar

Organized technical lecture on 'Indian Automobile - Car Segment' on 24 November 2022 at Ahmednagar. Guest of Honour of the event was Prof R M Mane, Mechanical Engineering Department, Government Polytechnic, Ahmednagar. Mr Abhay Krishnarao Raje, Honorary Secretary, Ahmednagar Local Centre, IEI also delivered lecture on the occasion.

Observed the 36<sup>th</sup> Foundation Day on 29 November 2022 at Ahmednagar. A technical talk was organized on the topic 'Business and Job Opportunities in Environment and Water Sector'. Speaker of the event, Mr Rajendrakumar V Saraf, Eminent Environment Engineer and Convenor of Environment Engineering Division, Maharashtra State Centre, IEI discussed about the business opportunities and appealed to the youth to work on accomplishing UN Sustainable Development Goals and become entrepreneurs by implementing innovative ideas.

### Asansol

Organized five-day Workshop in association with Mechanical Engineering Department, Asansol Engineering College on 'Solid Mechanics and Thermo-fluids' on 01-02, 07-09 September 2022 at Asansol. The programme was inaugurated by Mr Sumanta Karmakar, Honorary Secretary, Asansol Local Centre, IEI; Dr (Prof) P P Bhattacharya, Principal, Asansol Engineering College and Mr Subhas Chandra Shil, Faculty, Mine Surveying, Asansol Polytechnic. This workshop was conducted at Asansol Engineering College at different labs, namely Strength of Materials laboratory, Dynamics of Materials laboratory, Thermo-fluids laboratory, CAD-CAM laboratory, 3D Printing laboratory etc. The Workshop was conducted by different Faculty Members of Mechanical Engineering Department of Asansol Engineering College, namely Dr Debashis Sarkar, Mr Anish Deb, Dr Shantanu Datta, Dr Ashes Maji, Dr Srijan Paul and others.

### Bokaro Steel City

Organized technical paper presentation on the topic 'Change in Management Trends' on 07 August 2022 at Bokaro. Speaker of the session, Mr C P Sahay, Ex DGM (Traffic), SAIL, Bokaro Steel Plant emphasized that in the post-pandemic period, the primary focus for survival in the global market is cost reduction, which can lead to downsizing manpower and implementing modern technology to optimize production targets. He further discussed

about the change in demand pattern of the customers, development of new customer segments, challenges and opportunities and managerial traits, problem solving cluster formation, influence cluster information, etc.

### Coimbatore

Organized technical webinar in association with Department of Aeronautical Engineering, Hindusthan College of Engineering and Technology, Coimbatore on 'Bio-inspired Design, Materials and Characteristics – Aviation Perspective' on 07 September 2022 at Coimbatore. Guest Speaker of the event, Dr J Bruce Ralphin Rose, Associate Professor, Department of Aeronautical Engineering, Anna University Regional Campus, Tirunelveli briefly described about the significance of the bio-mimetic techniques which are being used in aviation towards corrosion resistance and anti-icing. He discussed about the temperature, attitude effect ice accretion on aerofoil, wing, nose and various parts of an aircraft components and to solve various problems using super hydrophobic method.

Organized technical webinar in association with Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Coimbatore on the topic 'Electric and Hybrid Vehicle Technology' on 22 September 2022. Guest Speaker of the event, Mr Karthikeyan Kesavalu, Deputy Manager – EV Sales, OKAYA Electric Vehicle, Coimbatore explained the significance of electric and hybrid vehicle technology in the present scenario. He further highlighted that electric vehicles have a smaller carbon footprint than gasoline-powered cars, as a result the transport sector can be benefitted in terms of increased energy efficiency and reduced local pollution. The speaker concluded that when operating in full electric mode, electric cars produce no tailpipe emissions, thereby reducing smoke and greenhouse gas emissions, even when taking into account the emissions associated with electricity generation.

### Dhanbad

Organized Technical lecture on 'New Technology and Business Model of Jamadoba Washery of Tata Steel' on 23 August 2022 at Dhanbad. Speaker of the event was Mr Mayank Shekhar, Chief Tata Steel, Jamadoba, Dhanbad. Also, Mr Amit Ranjan, Tata Steel, Dhanbad; Dr Arvind Kumar Mishra, Honorary Secretary, Dhanbad Local Centre, IEI and HOD, Mining Engineering Department, IIT-ISM Dhanbad; Prof Biswajit Paul, Joint Honorary Secretary and Professor, Department of Environmental Science and Engineering, IIT-ISM Dhanbad; Prof Nikkam Suresh, HOD, Fuel and Mineral Engineering, IIT-ISM Dhanbad; Dr D Basak, Chief Scientist, CSIR-CIMFR, Dhanbad; dignitaries from IIT ISM Dhanbad; CSIR CIMFR, BCCL attended the programme.

### Durgapur

Organized National Faculty Development Programme in association with Department of Electrical Engineering, Internal Quality Assurance Cell (IQAC), Haldia Institute of Technology on the topic 'Recent Advancement in Electrical Engineering (RAEE)' on 19-23 August 2022 through online mode. Dr Subrata Mondal, Principal, Haldia Institute of Technology said that the aim of the program is to provide a platform for the researchers of technical institutions to know about the research & developments, entrepreneurship in electrical engineering and its applications. Dr Tarun Kanti Jana, Dean, Convenor-IQAC, Haldia Institute of Technology emphasized the benefits of the program. Dr Dilip Dey, Head of the Department, Electrical Engineering, Haldia Institute of Technology said that such programmes provide opportunities to exchange ideas. Dr Mrinal Kanti Sarkar, Assistant Professor, Electrical Engineering Department, National Institute of Technology Manipur discussed on sliding mode controller design and simulation for DC to DC Converter; Dr Kalyan

Kumar Mistry, Principal Scientist, Energy Research and Technology, CSIR-Central Mechanical Engineering Research Institute, Durgapur discussed on Sensor Electronics devices and its industrial automation application. Dr D V Rajan, Deputy Chief Engineer (Electrical), Durgapur Steel Thermal Power Station, Andhra spoke on Energy Transition – Issues and Challenges on grid stability for sustainable development; Mr Koushik Dey, Senior Divisional Engineer (Electrical), DVC spoke on introduction to the industrial turbo generator. Dr Kamalika Tiwari, Assistant Professor, Electrical Engineering Department, Dr B C Roy Engineering College, Durgapur spoke on artificial senses; Prof Himansu Bikas Goswami, Past Chairman and former Council Member, Durgapur Local Centre, IET and former Professor, Electrical Engineering Department, DIATM Rajbandh spoke on recent trends in electrical engineering; Dr Alok Ranjan Verma, Assistant Professor, Electrical Engineering Department, Institute of Technology, Kanpur discussed recent advancement of measurement techniques in electrical systems.

#### Faridabad

Organized a Lecture meeting on the topic 'Cost of Poor Quality' on 25 September 2022 at Faridabad. Speaker of the event, Mr J P Singh, Past Chairman, Faridabad Local Centre, IET discussed on the quality performance of an organisation to optimize the various costs for best quality achievable at a reasonable price. He mentioned that in order to control the internal and external failure costs, prevention and appraisal costs are to be increased. Earlier, Mr Sandeep Handa, Chairman, Faridabad Local Centre, IET discussed that cost of poor quality is the cost that are generated due to producing defective materials which can impact company's profitability.

#### Kadapa

Organized technical seminar on 'Electric Vehicle Station Using Renewable Source' on 21 October 2022 at Kadapa. Mr R Narendra Rao, Honorary Secretary, Kadapa Local Centre, IET enlightened the audience about Photo Voltaic array, storage battery, grid and Diesel Generator set-based charging station. In his presentation, he proposed an EV charging station utilizing renewable energy as a business model and said that Electric Vehicles (EV) are considered as one of the most effective methods of transportation with zero following transmission.

#### Kochi

Organized webinar on the topic 'Evolution of Network' on 11 August 2022. Speaker of the event, Prof (Dr) Ambat Vijayakumar, Emeritus Professor, Department of Mathematics, Cochin University of Science and Technology (CUSAT), Kerala explained the fundamentals of networks and how these networks are practically related to our day-to-day activities and discussed about the evolution of internet protocols.

Organized webinar on the topic 'Computer Vision: An Overview' on 26 July 2022. Speaker of the event, Dr Madhu S Nair, Professor, Department of Computer Science, Cochin University of Science and Technology (CUSAT), Kerala explained about computer vision and its application with case studies. He further highlighted about the autonomous car and other applications in the field of medical investigation.

Organized webinar on the topic 'Neuroplasticity: The Potential for Lifelong Brain Development' on 13 July 2022. Speaker of the event, Dr Baby Chakrapani, Assistant Professor, Department of Biotechnology and Director Neuroscience, Cochin University of Science and Technology, Kerala compared human brain over super computer. He discussed about the development of neuroplasticity with various case studies related with Metaplasticity, the phenomenon of branching out the synapse. He also mentioned about Alzheimer's disease.

#### Kolar

Organized Guest Lecture on 'Automotive Product Development – A Holistic Approach' on 15 November 2022 at Kolar. Keynote Speaker of the event, Mr Sathyavath Sondokoppa N, Team Campaign Enabler – Daimler Trucks Innovation Centre India, Bangalore delivered lecture about the significance of the automotive sector. He shed light on the process of automotive product development, which involves transforming a vision or concept from older technology into newer, tangible products. He explained various accessories used to develop the car and the significance of various departments like finance/purchase, manufacturing, product engineering, human resources, marketing, new product development for continuous improvement. He discussed how effectively the Main Parameter Value (MPV) and S Curve plays a significant role during the product development. He highlighted different stages of new product development process starting from fuzzy front end to launch of the vehicle and also about EV battery system capacity and its life with various constraints.

#### Kattankulathur

Organized Guest Lecture in association with SRM Institute of Science and Technology on the topic 'Energy Conservation and Energy Efficiency' on 05 April 2022 at Kattankulathur. Speaker of the event was Mr D Rathinasabhapathy, External Faculty of Petroleum Conservation Research Association. The speaker explained the necessity of energy conservation and energy efficiency in daily life and mentioned about the energy conservation and energy efficiency practices in industries with core studies and in homes and educational institutes.

Organized webinar in association with Spaceonova on the topic Astrobiology on 20-21 April 2022. Dr Krishnendu Ghosh, Senior Research Investigator, Department of Astrobiology, Spaceonova and Mr Shraman Kumar Bohra, Co-Head, Department of Medical Research, Spaceonova delivered lecture on the occasion. The speakers highlighted that Astrobiology is an interdisciplinary scientific field of studies about the origins, early evolution, distribution and future of life in the universe. They further mentioned that life can be inferred by the presence of atmospheric biosignature gases.

Organized webinar in association with Indian Concrete Institute and Department of Civil Engineering, SRM Institute of Science and Technology on 'Sustainable Soil Stabilization Techniques' on 29 April 2022. Speaker of the event, Dr Anil Kumar Sharma, Assistant Professor, Civil Engineering, NIT Patna explained the importance and relevance of soil stabilization techniques with respect to geo technical engineering. He also highlighted about the development of fly ash lime mixed sludge for soil stabilization and compressive strengths. He discussed the effects of pH value fluctuations, SEM and XRD analysis, and characterization of green composites.

Organized webinar on the topic 'Exploring Data Structures' in association with the Department of Electronics and Communication Engineering, SRM Institute of Science and Technology on 30 May 2022. Speaker of the event, Dr A Sathya, Associate Professor, Rajalakshmi Engineering College, Poonamalle explained about data structures and algorithms; and correctness and efficiency of the algorithms. She further discussed about the arrays, linked list, stacks, hash tables, heaps, tree structures and graphs.

#### Kanpur

Organized lecture in association with All India Valuers Association, Kanpur on 'Legal Aspects of Valuation' on 08 October 2022 through online mode. Chief Guest of the event was Mr Mukesh Malhotra, Regional Manager, Regional Office Kanpur. Guest Speaker of the event, Mr Ranjan Kumar Raina, Registered Valuer, Bhopal talked about various legal aspects in valuation.

Organized Lecture on 'Applications of Fracture Mechanics' on 30 November 2022 through online mode. Guest Speaker of the event, Dr Rajeev Kumar, Associate Professor, Axis Institute of Technology and Management, Kanpur explained that use of fracture mechanics approach for design of engineering structures is relatively rare compared to stress based approach. Therefore, the influence of defects and their propagation can be described better than using a stress or stiffness approach. He added that despite the numerous advantages of fracture mechanics, it is infrequently utilized in engineering design due to the intricate process of acquiring precise energy release rates and deriving the compliance/crack length equation accurately. The speaker summarized that, fracture mechanics focuses on how cracks form and propagate. He stressed further that fracture mechanics will continue to make the systems and products stronger and safer.

#### Kanyakumari

Organized workshop on 'IoT Using NODEMCU' in association with The Institution of Electronics and Telecommunication Engineers, Trivandrum Centre, Nagercoil Professional Activity Centre at Riyasaa Labs, Nagercoil on 07 October 2022.

#### Madurai

Organized Lecture Meeting on 'Scope of Digital Marketing' on 19 November 2022 at Madurai. Chief Guest of the event, Ms Shiney Meshach, Regional Director, Brand Monk Academy and Consulting, Madurai while speaking on the topic explained that digital marketing involves marketing to consumers through digital channels like websites, mobile devices, social media platforms, etc and it is different from internet marketing. She added that digital marketing is a process of attracting customers via e-mail, search platforms, social media. She also highlighted the biggest challenges to digital marketers, which is how to set themselves apart world-wide, over-saturated with digital marketing advertisement.

#### Meerut

Organized webinar on the topic 'Composites' on 24 July 2022. Speaker of the event, Dr Anurag Gupta, Professor, Department of Mechanical Engineering, KIET Group of Institutions, Ghaziabad discussed about the importance of Fibre Reinforced Plastic (FRP) Composites in engineering applications and also mentioned about different types of composite materials. He compared FRP composite with structural steel and aluminium, the prime requirement to develop composite materials. He also discussed the different applications of FRP composites in Aerospace Engineering, Aviation Engineering, Automobile Engineering, etc.

#### Rourkela

Organized webinar on the occasion of National Thermal Engineer Day on the topic 'Thermodynamics of Power Generation' on 24 July 2022. Speaker of the event, Dr Manoj Kumar Moharana, Assistant Professor, Department of Mechanical Engineering, NIT Rourkela opined that per-capita energy consumption decides the standard of living of a country. He said that electricity is an essential part of nature and one of the most widely used forms of energy and added that the electricity we use is a secondary energy source because it is produced by converting primary energy sources such as coal, natural gas, nuclear energy, solar energy, and wind energy into electrical power. He highlighted that there is a need to shift to a renewable source of energy and hence it is essential to understand the thermodynamics of power generation.

Observed World Science Day for Peace and Development on 10 November 2022. A Seminar was organized on the topic 'Basic Sciences for Sustainable

Development' through hybrid mode. Speaker of the event, Prof Monalisa Mishra, Assistant Professor, Department of Life Science, National Institute of Technology Rourkela delivered lecture on 'Nano-toxicity revealed using Drosophila as a Model Organism' as an offshoot of the main topic. She explained that nanoparticles are used in our day to day life which has toxic effects and further opined that nanoparticles needs to be optimised to nullify its toxic effect before it is introduced for the human use.

#### Trichur

Organized webinar on the topic 'Modernisation in Motor Vehicles Department of Kerala' on 06 August 2022. Chief Guest of the event, Mr N Vinodkumar, Motor Vehicles Inspector (MVI), North Paravur, Ernakulam, highlighted the measures to avoid accidents in the roads by implementing traffic rules as well as safe driving.

#### Tiruchirappalli

Organized lecture in association with Computer Society of India, Tiruchirappalli Chapter; Indian Institute of Welding Tiruchirappalli Branch; Indian Welding Society, Southern zone; Indian Institute of Metals, Tiruchirappalli Chapter and Indian Institution of Industrial Engineering Tiruchirappalli on the topic 'Industry 4.0 – The Digital Transformation' on 10 May 2022 through online mode. Speaker of the event was Dr V G Sridhar, Professor, School of Mechanical Engineering, Vellore Institute of Technology, Vellore.

#### Tirunelveli

Organized a discussion on 'Geographic Information System' on 09 September 2022 at Tirunelveli. Chief Guest and Resource person of the event, Mr Dinesh Kumar, Process Lead, Mobius Knowledge Services, Chennai, discussed that GIS can show different kinds of data on one map for the people to see, analyse and understand patterns and relationships. He further explained the benefits of GIS.

#### Udaipur

Organized International Conference on 'Creativity and Innovation in Technology Development' during 9-10 December 2022 through hybrid mode in association with S S College of Engineering, Udaipur. The objective of this Conference is to provide a common platform to the researchers and academicians to share their scientific contributions, excellent review papers. It provides an excellent opportunity for Academicians, Researchers, Technocrats, and Students to present their research findings in Research advancements for Engineering and Technology. Chief Guest of the event was Honourable S S Sarangdevot, Vice Chancellor, Janardhan Rai Nagar Rajasthan Vidyapeeth University, Udaipur. The Keynote Speakers, who had shared their views on creativity and innovation in technology development, were Mr Mustafa Rampurwala, TCS Phoenix, Arizona, USA; Mr Kshitij Kochar, Atos Syntel, USA; Mr Chandra Prakash Jain, Chairman, Udaipur Local Centre, IEI; Dr Anil Mehta, Principal, Vidya Bhawan Polytechnic, Udaipur; Ms Neeti Bhatt, HR, Future Business Solution Private Limited; Dr B L Salvi, Associate Professor, Mechanical Engineering Department, College of Technology And Engineering, Udaipur; Shri P K Jain, Secretary, IIIE; Dr Ritesh Tirole, Associate Professor, Electrical Engineering Department, Sir Padampat Singhania University, Udaipur.

Organized Industrial visit at RSWM Limited, Rishabhdev, District Udaipur on 17 December 2022. On this occasion, Mr Chandra Prakash Jain, Chairman, Udaipur Local Centre, IEI appealed to the members to share their experience in the construction of the country to accelerate future development. Mr Kailash Khatoad, Chief Operating Officer and Mr Anil Dalawat, General Manager (Engineering), RSWM Limited described briefly about RSWM Limited, which is India's leading textile manufacturing company.





# The Institution of Engineers (India)

## IEI YOUNG ENGINEERS AWARD 2023-2024

### Notification

The Institution of Engineers (India) is a multi-disciplinary professional body of engineers with 15 engineering disciplines and over 9,00,000 members in India and abroad. The Institution was established in 1920 and was incorporated by Royal Charter in 1935. It has been in the forefront of engineering profession addressing the socio engineering problems for progress of the country. IEI functions among professional engineers, academicians, research workers to update their professional knowledge through continuous professional development. With its large international linkages and a network of 125 Centres in India and Six Overseas Chapters, the Institution has built up wide reach and large infrastructure to meet its objectives of promoting engineering in all aspects.

With a view to promote the pursuit of excellence in the field of engineering, IEI has instituted 'IEI Young Engineers Award'. The Award consists of a Plaque and a Certificate. The purpose of the Award is to recognize outstanding achievements/contributions made by young engineers in engineering research, excellence in engineering technology development, technology transfer, etc. Any engineer citizen of India not older than 35 years of age as on March 31, 2023 is eligible for the Award. The IEI Young Engineers Award is presented to awardees for all the 15 Engineering Divisions of the IEI during the respective National Conventions. The awardees attending the National Convention will be provided with free accommodation & their traveling expenses (AC-3 Tier train fare by shortest route) will be reimbursed on production of original documents.

The Application Proforma may be downloaded from IEI website (<https://www.ieindia.org>). Soft copy of the filled-in application proforma should be forwarded to [award@ieindia.org](mailto:award@ieindia.org) by March 31, 2023. Further, six copies of the duly filled application form, along with all supporting documents, endorsed by appropriate authority should be sent to the below mentioned address so as to reach us latest by **April 10, 2023**:

**Director (Technical)**  
The Institution of Engineers (India)  
8 Gokhale Road, Kolkata 700020

The envelope containing the application should be superscribed at the top as 'IEI Young Engineers Award 2023-2024' and name of the engineering division under which the applicant desires to be considered for the Award.



IEI - Springer Journal



ISSN Print: 2250-2149  
ISSN Online: 2250-2157

SCOPUS Indexed

**Series A**  
CiteScore 2021  
1.6  
Google Scholar h5  
Index 2021  
16



ISSN Print: 2250-0545  
ISSN Online: 2250-0553

SCOPUS Indexed

**Series C**  
CiteScore 2021  
2.3  
Google Scholar h5  
Index 2021  
20



ISSN Print: 2250-2106  
ISSN Online: 2250-2114

SCOPUS Indexed

**Series B**  
CiteScore 2021  
1.6  
Google Scholar h5  
Index 2021  
17



ISSN Print: 2250-2122  
ISSN Online: 2250-2130

SCOPUS Indexed

**Series D**  
CiteScore 2021  
1.6  
Google Scholar h5  
Index 2021  
13



ISSN Print: 2250-2483  
ISSN Online: 2250-2491

SCOPUS Indexed

**Series E**  
CiteScore 2021  
1.3  
Google Scholar h5  
Index 2021  
11

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# IEI DIARY



## Architectural Engineering Division

Thirty-seventh National Convention of Architectural Engineers on **"Modern Trends in Architectural Engineering & Construction Practices"**

Pune, March 18-19, 2023

The Honorary Secretary, IEI, Pune Local Centre, 1332, Abhiyanta Bhavan, Shivajinagar, J M Road, Pune 411005, [☎: 020-25533376/25530250/25520239, E-mail : [punelc@ieindia.org](mailto:punelc@ieindia.org); Website : [www.ieipune.org](http://www.ieipune.org)]

## Civil Engineering Division

All India Seminar on **"Efficient Water Management Conservation, Wastewater Treatment & Reuse in Irrigation Industries etc"**

Lucknow, March 18-19, 2023

The Honorary Secretary, IEI, Uttar Pradesh State Centre, Engineers' Bhawan, River Bank Colony, Lucknow 226018 [☎: 0522-2625322, E-mail : [upsc@ieindia.org](mailto:upsc@ieindia.org), Website: [www.ieiup.org.in](http://www.ieiup.org.in)]

All India Seminar on **"An Introduction to Computational Fluid Dynamics and Biomechanics"**

Jalpaiguri, April 25-26, 2023

The Honorary Secretary, IEI, North Bengal Local Centre, Engineers' House, Jalpaiguri Government Engineering College Campus, PO Jalpaiguri Government Engineering College, Dist. Jalpaiguri, Pin 735102, Ph : 03561-255468, E-mail : [nblc@ieindia.org](mailto:nblc@ieindia.org), Web: [www.ienblc.org](http://www.ienblc.org)

## Computer Engineering Division

All India Seminar on **"Recent Trends in Information and Communication Technology"**

Kanchepuram, March 15-16, 2023

The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology – ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: [kanchepuramlc@ieindia.org](mailto:kanchepuramlc@ieindia.org)]

Two Days National Conference on **"Start Up, Patents & Copyrights"**

Indore, March 24-25, 2023

The Honorary Secretary, IEI, Indore Local Centre, SGSITS Campus, 23, Sir M Visvesvaraya Marg (Park Road), Indore 452003 [E-mail: [indorelc@ieindia.org](mailto:indorelc@ieindia.org)]

All India Workshop on **"Short Term Training Program in Data Science and Machine Learning Visualization"**

Kanchepuram, April 03-04, 2023

The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology – ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: [kanchepuramlc@ieindia.org](mailto:kanchepuramlc@ieindia.org)]

## Electrical Engineering Division

One Day Seminar on **"Evaluating Choice of Traction Option for Sustainable Indian Railways"**

Indore, March 15, 2023

The Honorary Secretary, IEI, Indore Local Centre, SGSITS Campus, 23, Sir M Visvesvaraya Marg (Park Road), Indore 452003 [E-mail: [indorelc@ieindia.org](mailto:indorelc@ieindia.org)]

Two Days Seminar on **"AI in Electrical Power Systems"**

Gwalior, April 29-30, 2023

The Honorary Secretary, IEI, Gwalior Local Centre, Green Park, Engineer Road, Behind New Collectorate, City Centre, Gwalior 474011 [☎: 0751-2454168, E-mail: [gwaliorlc@ieindia.org](mailto:gwaliorlc@ieindia.org)]

## Electronics and Telecom. Engg. Division

All India Seminar on **"MECHATRONICS an Emerging Technology and Future Trends"**

Bareilly, March 15-16, 2023

The Honorary Secretary, IEI, Bareilly Local Centre, 44, Camphor Estate Colony, Near Champhor Hospital, Rampur Road, C B Ganj, Bareilly 243502, Uttar Pradesh [Mobile: 9634953691, E-mail: [bareillylc@ieindia.org](mailto:bareillylc@ieindia.org)]

All India Seminar on **"Challenges and Technical Solutions on Internet of Things (IoT) for Industrial Automation"**

Coimbatore, April 20-21, 2023

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG Tech Campus, Peelamedu, Coimbatore, 641004, Tamilnadu [☎:0422-2580733, E-mail: [coimbatorelc@ieindia.org](mailto:coimbatorelc@ieindia.org)]

## Environmental Engineering Division

Two Days Seminar on **"Green Energy: Need of the Hour"** 2023

Gwalior, March 17 - 18, 2023

The Honorary Secretary, IEI, Gwalior Local Centre, Green Park, Engineer Road, Behind New Collectorate, City Centre, Gwalior 474011 [☎: 0751-2454168, E-mail: [gwaliorlc@ieindia.org](mailto:gwaliorlc@ieindia.org)]

## Marine Engineering Division

All India Seminar on **"Port Bill 2022 & its Implications in Maritime Logistics"**

Hyderabad, March 17-18, 2023

The Honorary Secretary, IEI, Telangana State Centre, IEI, 6-2-910, "Visvesvaraya Bhavan", Khairatabad, Hyderabad 500004 [☎: 040-23314969/23373087/23370779, E-mail: [telanganasc@ieindia.org](mailto:telanganasc@ieindia.org), Website: [www.ieitsc.org.in](http://www.ieitsc.org.in)]

## Mechanical Engineering Division

All India Seminar on **"Hand-on-Workshop on Parametric Design using Fusion 360"**

Kanchepuram, March 23-24, 2023

The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology – ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: [kanchepuramlc@ieindia.org](mailto:kanchepuramlc@ieindia.org)]

All India Workshop on the theme **"Leveraging Automation and CNC Machine for more Intelligent Production"**

Indore, April 18-19, 2023

The Honorary Secretary, IEI, Indore Local Centre, SGSITS Campus, 23, Sir M Visvesvaraya Marg (Park Road), Indore 452003 [E-mail: [indorelc@ieindia.org](mailto:indorelc@ieindia.org)]

National Conference on **"Recent Trends in Design and Application in Energy Development Programme"**

Thiruvananthapuram, May 10-11, 2023

The Honorary Secretary, IEI, Kerala State Centre, Visvesvaraya Bhavan, Opposite Kanakakunnu Palace, Thiruvananthapuram 605033, Ph: 0471-2322991 / 2322992, E-mail: [keralasc@ieindia.org](mailto:keralasc@ieindia.org); Website: [www.ieitvm.org](http://www.ieitvm.org)

Thirty-eighth National Convention of Mechanical Engineers on **"Emerging Trends and Developments in Smart Manufacturing , Renewable Energy and Mechanical Systems Diagnostics/Design"**

Nagpur, September 08-09, 2023

The Honorary Secretary, IEI, Nagpur Local Centre, North Ambazari Road, Nagpur 440010, [☎: 0712-2525617, E-mail : [nagpurlc@ieindia.org](mailto:nagpurlc@ieindia.org)]

## Production Engineering Division

Thirty-seventh National Convention of Production Engineers on **"Recent Trends and Future Direction in Production Engineering and Management: Vision 2030"**

Kolkata, June 16-17, 2023

The Honorary Secretary, IEI, West Bengal State Centre, 8 Gokhale Road, Kolkata 700020 [☎: 033-22238914, Fax: 033-22233140, E-mail: [wbsc@ieindia.org](mailto:wbsc@ieindia.org)]

## Interdisciplinary Coordination Committee

One Day Workshop on **"Energy And Environment with special reference to HVAC & R Industries"**

Ranchi, March 19, 2023

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO Doranda, Ranchi 834002 [☎: 0651-3510412, E-mail: [jharkhandsc@ieindia.org](mailto:jharkhandsc@ieindia.org); Website: [ieijsjrharkhand.org](http://ieijsjrharkhand.org)]

One Day Seminar on **"Innovative Technique for Effective Research Paper Communication"**

Jamshedpur, March 25, 2023

The Honorary Secretary, IEI, Jamshedpur Local Centre, Subarnarekha Link Road, Sakchi, In between (Red Cross Society and TCE Building), Jamshedpur 831001 [☎: 0657-2980316, E-mail : [jamshedpurlc@ieindia.org](mailto:jamshedpurlc@ieindia.org)]

One Day Seminar on **"Intellectual Property Rights with Focus on Copyrights and Patents"**

Kanchepuram, April 12, 2023

The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology – ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: [kanchepuramlc@ieindia.org](mailto:kanchepuramlc@ieindia.org)]

## Superannuation from IEI



Mr Dasarathi Rout, an employee of the Institution HQ has superannuated from the services of IEI on February 28, 2023. He joined the Institution on July 01, 1986 and rendered his services to the Institution for a period of 36 years.

IEI wishes Mr Dasarathi Rout and his family a happy and healthy life in future.



Mr Tapan Kumar Biswas, an employee of the Tamilnadu State Centre of the Institution has superannuated from the services of IEI on February 28, 2023. He joined the Institution on September 07, 1998 and rendered his services to the Institution for a period of 24 years.

IEI wishes Mr Tapan Kumar Biswas and his family a happy and healthy life in future.

## Empanelment as Advocate/ Attorneys & Chartered Accountant for Engineers

The Engineers practicing as Advocate/ Attorneys and Chartered Accountants are invited to be empanelled with The Institution of Engineers (India) for promoting their visibility in public domain.

The application fee for empanelment is, Rs 5900/- (GST included), which may be made in Demand Draft/ Multi-city Cheque in favour of **“The Institution of Engineers (India)”** payable at Kolkata.

The hard copy of application should reach to:-

The Director (Membership)

The Institution of Engineers (India), 8 Gokhale Road, Kolkata 700020

Please visit : <https://www.ieindia.org/webui/iei-home.aspx> for further details.



## The Institution of Engineers (India)

### 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.

Every year, the Institution invites applications 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/AMIE/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](http://www.ieindia.org), should be sent through email to [research@ieindia.org](mailto: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**

Kindly go through the guidelines (visit link <https://www.ieindia.org/webui/IEI-Activities.aspx#RnD-Initiative>) before filling up the application.



# The Institution of Engineers (India)

*A Century of Service to the Nation  
Celebrates*

## World Water Day

March 22, 2023

*Theme:*

## ACCELERATING CHANGE



### Engineering Staff College of India

**Autonomous Organ of The Institution of Engineers (India)**  
(IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018],  
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)

#### Continuing Professional Development Programmes (CPDPs) for the Month of March 2023

Sl. No.	Name of the Course	Scheduled Dates
1.	Reverse Engineering Techniques (collaboration with Industry)	01 – 03 Mar, 23
2.	Sources of Energy: Coal, Solar, Wind, Coal Mine Methane, Coal Bed Methane, Underground Coal Gasification, Coal to Liquid	01 – 03 Mar, 23
3.	Testing of High Voltage Power Equipment	01 – 03 Mar, 23
4.	Advanced Engineering Metrology Includes Optical Measurement in Pharma Industries and Process Engineering Application	06 – 08 Mar, 23
5.	Total Performance Management Systems	06 – 09 Mar, 23
6.	Machine Learning & Artificial Intelligence	06 – 10 Mar, 23
7.	Structural Safety of Existing Dams – Evaluation and Impacts	06 – 10 Mar, 23
8.	Best Practices in Distribution System – Operation & Maintenance	08 – 10 Mar, 23
9.	Advance Material Testing Techniques (New)	13 – 15 Mar, 23
10.	Metal Additive Manufacturing and its Applications	13 – 15 Mar, 23
11.	Preparation of DPR and Tender Documents for Sewage Treatment Plant.	13 – 15 Mar, 23
12.	Tariff Policy - Basics of Tariff Calculation & Procedure / Information Required for Preparation of Tariff Petition (ARR) & Energy Scheduling	15 – 17 Mar, 23
13.	Advances in Industrial Heat Treatment of Metals & Alloys	20 – 22 Mar, 23
14.	Laboratory Management System Awareness & Internal Auditing (As per ISO / IEC 17025 : 2017 & NABL Requirements)	20 – 23 Mar, 23
15.	Automation in Micro Irrigation Systems for improving Irrigation Efficiency	20 – 24 Mar, 23
16.	Cyber Security Issues in Power Sector	21 – 23 Mar, 23
17.	Industrial Decarbonization in India	22 – 23 Mar, 23
18.	Management Programme, Communication & Presentation Skills, Team Building, Leadership, Skill Development for Managers & Engineers in Mineral Industry	23 – 25 Mar, 23
19.	IT Enabled Applications in Water Supply and Sewerage Projects.	23 – 26 Mar, 23
20.	Current Environment legislation and Regulations	27 – 29 Mar, 23
21.	Customer Relationship Management- Modernization of Metering, Billing & Collection (MBC) in Distribution Utilities	28 – 31 Mar, 23
22.	Proficient Testing for Laboratories (ISO/IEC 17043)	29 – 30 Mar, 23

*For detail information please contact:*

**Engineering Staff College of India**

Old Bombay Road, Gachibowli, Hyderabad – 500 032

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The Institution of Engineers (India) as a body accepts no responsibility for the statements made by individuals. Reprints of any portion of the publication may be made provided reference thereto is quoted.

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