



# I.E.I NEWS

September 2022

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A CENTURY OF SERVICE TO THE NATION

Volume 29

Number 6

## Council Elects New President of IEI



Er Chinmay Debnath, FIE has been elected as the President of The Institution of Engineers (India) for the session 2022-23 during the 717<sup>th</sup> Council Meeting of The Institution held on September 03, 2022 at Nagpur.

Er Debnath born on 1 March 1961 at Agartala, Tripura. He took admission in B Tech in Metallurgical Engineering in VREC Nagpur (Presently VNIT Nagpur) and subsequently shifted to Tripura Engineering College, Tripura (Presently NIT Agartala) and Graduated in Civil Engineering in the year 1983 from this College under Calcutta University. He joined PWD, Tripura in 1984 and superannuated as Superintending Engineer in February 2021.

During his service, he was attached to construction works in Roads, Buildings, Drinking Water and Sanitation. He was associated with construction of multistoried building in/c Medical College and also construction of Water Treatment Plants, Iron Removal Plants, Overhead Reservoirs and was also engaged with planning and design of buildings, roads, bridges in PWD.

Er Debnath is associated with many organizations and has been an active social activist. He is involved in organizational activity since school days. After his superannuation in 2021, he has attached himself more with activities of professional engineering organizations, namely The Institution of Engineers (India), Indian Buildings Congress (IBC) and Indian Engineers Federation (INDEF).

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

### Innovative Textile Materials

Kanpur Local Centre, IEI organized The Thirty-fourth National Convention of Textile Engineers during September 10-11, 2022 in association with The Textile Association (India), Uttar Pradesh Unit at Outreach Auditorium, Indian Institute of Technology Kanpur. A National Seminar was also organized on the occasion on the theme **Innovative Textile Materials**. Mr Mayur Maheshwari, IAS, CEO, Uttar Pradesh State Industrial Development Authority



(UPSIDA), Commissioner of Industries and Commissioner & Director of Handlooms, Uttar Pradesh graced the occasion as Chief Guest. Mr Sushil Kumar Gupta, Managing Director, India Fasteners Limited, Raebareli was the Guest of Honour. Prof (Dr) Sadhan Chandra Ray, Chairman, Textile Engineering Division Board [TXDB] IEI presided over the function. In his address, Prof Ray emphasized on the collaborative efforts with public-private enterprises

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

The industry sector has been confronted with challenges to do more with finite resources. With the advent of Industry 4.0, digitalization and automation could be the game changers for meeting the above objective. The Digital Enterprise combines the real and the digital world and



infinite amount of data allows us to use our finite resources efficiently and make the industry more sustainable. Combining the real and the digital world makes it possible to seamlessly integrate the entire value chain from design to realization, while optimizing with a continuous flow of data. A Digital Enterprise is able to harness the unlimited power of data by gaining valuable insights to make fast and confident decisions – and also to create best-in-class products through efficient production. In a Digital Enterprise, there is balance between security and openness. In order to protect all the continuous, multidirectional data flows to ensure optimum collaboration between stakeholders, multi-layered data security concept is incorporated at every step. The Digital Enterprise brings together all associated processes, breaks down traditional silos and helps bridge the gaps between software and hardware, IT and OT, shop floor and management. The comprehensive Digital Twin makes it possible to integrate the entire product lifecycle. Digital Threads are the map for the digital journey based on specific business workflows, which digitally connect all tasks and processes of the entire lifecycles of product and process flow and able to solve the problems and challenges. Moreover, digital transformation is the key to unlock sustainable value in our economies and societies. Digitizing the physical world and embedding sustainability into the heart of digital systems can create a new era of sustainable organizational growth. With the growth in the landscape of digital technologies, companies are focusing more on process control modernization, digital transformation, customer service management, employee experience to stay in symbiosis with their customers and stakeholders. The efficiencies gained through digital automation and the expanded reach made available through digital services can help companies reach their sustainability goals faster.

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## Council Elects New President of IEI

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Er Chinmay Debnath enrolled with The Institution of Engineers (India) as an Associate Member on 18 July 1986, became MIE in 1990 and FIE in the year 2013 and has been attached to this century old organization well over three decades. He is involved with Tripura State Centre, IEI since its inception in the year 1989, when it was formed as ad hoc as Agartala Local Centre. He was the Committee Member of Agartala Local Centre during 1993-95 and Joint Honorary Secretary during 1995-97 & 1997-99. During 1999-2001, he was the Honorary Secretary of Agartala Local Centre, which was upgraded to Tripura State Centre in December 2008. During this period, the only SAARC Seminar was organized in Tripura in the year 2000 with participation of representatives from Sri Lanka, Bangladesh, Nepal and India as co-ordinated by FIESCA. During 2013-15, he was the Committee Member of Tripura State Centre; Honorary Secretary of Tripura State Centre during 2015-17. During his tenure, by virtue of organizing large number of technical activities during 2016-17, Tripura State Centre was awarded as the Best Centre in C category by IEI. He was elected as the Chairman of Tripura State Centre for the session 2019-22 and has been serving the Council Member of IEI since then. His other important assignments with IEI during 2021-22 includes, Chairman, Centre's Coordination Committee, Member, BoG, Rural Development Forum; Member, Civil Engineering Division Board; Member, Service Rules and Headquarters Management Committee. During 2021-22, he was a Special Invitee in Asset Management Committee. Er Debnath has attended number of technical events organized by IEI in India as well as Bangladesh & Nepal and was also involved in organizing programmes jointly with other Centres. He had attended the Indian Engineering Congress first time in the year 1994 as held at Kolkata and subsequently, attended Engineering Congress many times.

His long association with Indian Buildings Congress (IBC) (A Professional Organisation connected with built environment) since 1998, when he was enrolled as Life Member. He is the Governing Council Member, IBC since 2002. During 2007-08 and 2008-09, he was the National Executive Committee Member and the National Vice President for the sessions 2019-20, 20-22 and 22-23. He had received IBC Outstanding Contribution Award 2009, IBC Presidential Award 2013 and IBC Presidential Award 2022. He was greatly involved in establishment of State / Local Centres of IBC in 16

States and Union Territories, which include Andaman & Nicobar, Hyderabad, Kolkata, Kerala, Assam, Meghalaya, Sikkim, Manipur, Arunachal Pradesh, Nagaland, Uttarakhand, Odisha, Puducherry, Tamilnadu, Sikkim, Himachal Pradesh.

Since 1996, he is a Member of Indian Roads Congress, (IRC), a professional organization of Engineers in Roads Sector. He was National Council Member of IRC during 2009-10 & 2010-11. Since 2005, He is a member of Institution of Public Health Engineers (India) (IPHE). He was National Council Member of IPHE during 2016-18 and now Advisor to IPHE, Agartala Centre during 2022-23. He is associated with Indian Engineers Federation (INDEF) [An apex service federation of Graduate Engineers serving in State (34 State / UT) & Central (8 Central Organisations Govt. Service & Undertakings)] since 1987. He was Secretary General of INDEF (undivided Eastern Region) during 2002-2004; Secretary General, INDEF National Body during 2005-2009; President, INDEF (North-Eastern Region) during 2010-2012; Vice President, INDEF National Body during 2016-18; Chairman, INDEF National Body during 2018-2022 and Secretary General of Senior Engineers Forum of INDEF National Body during 2022-24. Since joining in service in 1984, he was the member of State Engineers Association, Tripura (Constituent body of INDEF in Tripura State); Executive Member from 1985; Treasurer in 1995-97; General Secretary in 1997-1998 & Vice President in 2016-18.

He is associated with College Alumni NIT Agartala (Erstwhile Tripura Engineering College) and was in the Students Council of College & also was Vice President of the Alumni Association. He is also associated with School Alumni Netaji Subhas Vidyaniketan and was in the Students Council of School and also was General Secretary of the Alumni Association.

He is member of many other professional organizations like India Society of Engineers (ISE), Kolkata; India Society of Earthquake Technology (ISET), Roorkee and Indian Institute of Bridge Engineers (IIBE), Mumbai. He was the member of American Society of Civil Engineers (ASCE), India Chapter, Kolkata.

Er Debnath's role and dedication for the development activities of the State of Tripura as well as for the cause of professional upliftment of Engineering fraternity in the country is praiseworthy and worth emulating.

### Be proud to be a Certified Professional Engineers (PE) and International Professional Engineers (IntPE)

#### Professional Engineers (PE) Certification by IEI

##### ELIGIBILITY REQUIREMENT

- BE/ BTech or equivalent recognised by Statutory Authority or Government of India
- Five years or more professional experiences
- Membership of recognised professional engineering institution / association
- Maintained Continued Professional Development (CPD) at a satisfactory level

For details, please visit the following link :

[https://www.ieindia.org/webui/IEI\\_PE\\_Certification.aspx](https://www.ieindia.org/webui/IEI_PE_Certification.aspx)

#### International Professional Engineers (IntPE) Certification by IEI

##### ELIGIBILITY REQUIREMENT

- BE/ BTech or equivalent recognised by Statutory Authority or Government of India
- Seven years or more professional experiences
- Minimum two years professional experience in significant engineering activity
- Membership of recognised professional engineering institution / association
- Maintained Continued Professional Development (CPD) at a satisfactory level

For details, please visit the following link :

[https://www.ieindia.org/webui/IEI\\_IntPE\\_Certification.aspx](https://www.ieindia.org/webui/IEI_IntPE_Certification.aspx)

The eligible candidate can submit application in the prescribed format to:  
The PE Cell, The Institution of Engineers (India), 8 Gokhale Road, Kolkata 700020

For any query and assistance, please send email to: [pe@ieindia.org](mailto:pe@ieindia.org)

## Smart Manufacturing

The 36<sup>th</sup> National Convention of Production Engineers was organized by **Tamilnadu State Centre** during August 18-19, 2022 in association with the Department of Manufacturing Engineering, Anna University, Chennai at Henry Maudslay Hall, Anna University, Chennai. A National Seminar was also organized on the theme **Smart Manufacturing**.

Prof (Dr) R Velraj, Vice Chancellor, Anna University graced the function as Chief Guest and Dr T M Gunaraja, Past President IEI, graced the occasion as Guest of Honour. The program was started with welcome address, delivered by Mr S Kannan, Chairman, Tamilnadu State Centre, IEI. Dr Seeram Satyanaraya, Chairman, Production Engineering Division Board [PRDB], IEI presided over the inaugural function. Dr G Ranganath, Chairman, CATE, IEI was present in the function and address the audience. On the occasion, three eminent engineering personalities were felicitated for



their immense contribution in the field of Production Engineering, namely Dr Jankarajan Ramkumar, Professor, Department of Mechanical Engineering & Design Programme, Indian Institute of Technology Kanpur. (in absentia); Mr Anandanatarajan Venkataraman, Director, Powertrain Manufacturing Engineering, International Market Group, Ford Motor Company, Chennai and Mr Sasikumar Gendham, Managing Director, Salcomp Manufacturing India Private Limited, Chennai. The IEI Young Engineers Award for the year 2021-22 and 2022-23 in Production Engineering Division were presented to Dr Manidipto Mukherjee, Senior Scientist, CAMM, CSIR-Central Mechanical Engineering Research Institute Durgapur and Dr Saurabh Pratap, Assistant Professor, Department of Mechanical Engineering, Indian Institute of Technology (BHU) Varanasi. (in absentia) respectively. The Technical Proceedings contains the full text papers presented during the technical sessions was released on the dais in august presence of the dignitaries. Mr K N Sivaraju, Honorary Secretary, Tamilnadu State Centre, IEI proposed the vote of thanks.

The F W Taylor Memorial Lecture was delivered by Mr K E Raghunathan, National President, Association of India Entrepreneurs on the theme 'What MSME should do in Current Economic Situation'. In his lecture, Mr Raghunathan had shared insights into the opportunities and challenges that an entrepreneur faces in today's growing market. The G C Sen Memorial Lecture was delivered by Mr Nilesh J Vasa, Faculty Member, Department of Engineering Design, IIT Madras on the theme 'LASER Assisted Micro Manufacturing for Functional Devices'. In his lecture, Mr Vasa deliberated the principle behind LASER as an energy source for micro manufacturing

and opened the minds of the listeners on how LASER energy can be used for manufacturing the components in micro, and nano-meter scales.

The National Convention was laced with Keynote Address and presentations by experts from manufacturing sector as well as author presentations. Mr M Radhakrishnan, Deputy Manager, Fanuc India Private Limited delivered Keynote Address on the topic 'Digitization & Digitalization trend with IoT in Smart Manufacturing'. Mr Anandanatarajan Venkataraman delivered lecture on the topic 'Smart Manufacturing in Automobile Industry'. Mr M S Ravikumar, Regional Operations Officer, ZF Commercial Vehicle Control Systems India Limited deliberated on 'Smart Manufacturing Practices at ZF'. Mr Surendran Devaraj, Product Director, Maxbyte Technologies delivered lecture on the topic 'Autonomous Mobile Robots for Smart Manufacturing'; Mr Saini Ved Prakash, Business Manager – Quality Management Solutions, Hexagon Manufacturing Intelligence delivered lecture on 'Metrology for Smart Manufacturing'; Mr Vijay Karunakaran, CEO, InGage Technologies delivered his presentation on 'Role of Metaverse (AR – VR) in Smart Manufacturing'; Mr J Ramesh, Product Head, Ace Micromatic delivered lecture on 'Digital Transformation : Improving Competitiveness, Delivering Bottom Line Impact'; Prof M Pradeep Kumar, Anna University delivered lecture on 'Current and Future Scope of Additive Manufacturing'; Dr E Bhaskaran, Joint Director (Engineering) / General Manager, District Industries Centre (DIC), Department of Industries and Commerce, Government of Tamilnadu deliberated on the topic 'Sustainable and Smart Manufacturing in Paramakudi Engineering Cluster'; Mr P S Praveen, Blockchain Monk delivered lecture on 'Blockchain Technology in Industry 4.0'.

Also papers were presented on diversified topics, embracing smart manufacturing concept, which include; Critical Review on Cryogenic Cooling and its Effects on Surface Integrity; Evolution of Microstructure and Mechanical Properties of Keyhole Plasma Arc Welded Super Austenitic Stainless-Steel Joints; Influence of Rotary Friction Welding on Mechanical and Metallurgical Properties of AISI 410 Martensitic Stainless-Steel Joints; Smart Technology for Higher Production in Indian Mining Conditions; Review of Robot learning for Smart Manufacturing; Influence of Satellite 6 on Enhancing the Wear Resistance of Squeeze Cast Az91 for Unlubricated Applications and Importance of Human Factor in Sustainability of Smart Manufacturing and so on.

During the Valedictory Function Dr G Ravikumar, Registrar I/c, Anna University, Chennai, graced the function as Chief Guest. Mr S Kannan, Chairman, Tamilnadu State Centre, IEI delivered the welcome address. Dr C Sendil Kumar, Organizing Secretary proposed the vote of thanks.

*The recommendations emanated from the National Convention include:*

*The latest technology digital twins have taken the center stage in production engineering domain, which need to be implemented in a wider spectrum; The application of 3D virtual working model in manufacturing should be implemented to improve product accuracy and elimination of waste; Implementation of IoT and AI in production engineering is strongly recommended, which results cost effective manufacturing with minimized maintenance of the machines and equipment.*

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

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Sustainable organizational growth also focuses on resilient business model, which can anticipate, adopt continuously and thrive amid uncertainty.

Further, when the countries across the world are struggling to find pathways within the complex ambit of resilience and recovery in post pandemic era, India focus is on its spirit of self-reliance. Prime Minister made a strong pitch for self-reliance in technology-related sectors, which play a key role in

last-mile delivery of services and have immense potential for job creation. The inclusion of need and impact assessment for CSR projects undertaken by the private sectors are relevant for the realization of the Aatmanirbhar Bharat project.

This is the ideal time to inspire, reinforce and motivate the implementation of self-sufficiency model in the country to boost up the national economy, when digital strategy and management has occupied the center stage.

## Technologies for Green Fireworks – Holistic Approach towards Environmental Challenges

**Madurai Local Centre** of the Institution organised the Thirty-sixth National Convention of Environmental Engineers during 26-27 August 2022 at Isai Hall, Hotel Tamilnadu, Madurai. A National Conference was also organised on the occasion on the theme **Technologies for Green Fireworks – Holistic Approach towards Environmental Challenges**. Dr N Jegatheesan, President, Tamilnadu Chamber of Commerce and



Industry graced the inaugural function as Chief Guest. Dr G Ranganath, Principal, Adhiyamaan College of Engineering, Hosur, Council Member IET and Chairman, Committee for Advancement in Technology and Engineering [CATE], IET was the Guest of Honour. The programme was started with the welcome address delivered by Dr N Sivasubramanian, Chairman, Madurai Local Centre, IET. Mr S Rajagopal, Immediate Past Chairman, Madurai Local Centre IET briefed the audience about the theme of the National Convention. Mr Jagdish Chand Singhal, Chairman, Environmental Engineering Division Board [ENDB], IET presided over the inaugural session and addressed the august audience. Dr Jegatheesan, in his address deliberated on the regulations for manufacturing and quality assurance of green fireworks. He further opined that the fruitful deliberation during the technical sessions would help to explore the alternative chemicals with less occupational hazards to produce the green fireworks. Dr G Ranganath in his address emphasized the importance of technical activities organised by IET all over the year. He further explained the significance of National Convention of Engineering Divisions of IET and its role to find out feasible engineering solutions on the issues prevailing at national level. On the occasion, Dr Ajoy Kumar Sinha, Former Chief Engineer, PHED, Bihar; Dr N S Raman, Dean (R&D), GNIT Nagpur and Mr P G S Dinesh Davidson, Assistant Vice President, (Operations), J K Fennar India Limited, Madurai were felicitated as Eminent Engineering Personalities for their immense contribution in the field of Environmental Engineering. The recipients of IET Young Engineers Award in Environmental Engineering Division for the year 2021-22 are; Dr V C Padmanaban, Ad-hoc Faculty, Department of Biotechnology, National Institute of Technology Andhra Pradesh; Mr Manish Yadav, Deputy Manager, Central Mine Planning and Design Institute Limited, Bhubaneswar and Mr Gaurav Prakash, Environment Engineering Consultant, The Ridge Environment Consultants, Basal, Solan, HP. The recipient of IET Young Engineers Award in Environmental Engineering Division for the year 2022-23 is Mr Saurabh Sakhre, Scientist, Council of Scientific and Industrial Research, National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, Kerala. A Souvenir was released on the occasion in the august presence of the dignitaries on the dais. Prof (Dr) P Udhaya Kumar, Honorary Secretary, Madurai Local Centre proposed the vote of thanks. The N V Modak Memorial Lecture was delivered by Dr R Venkatesan, Former Senior Scientist and Director, NIOT Chennai. The Prof G D Agarwal Memorial Lecture was delivered by Dr Bharat Jhunjhunwala, Former Professor, IIM Bangalore. During the Plenary Session, Dr Arup Kumar Misra, Member, Environmental Engineering Division Board, IET and Chairman, Pollution Control Board Assam delivered Special Invited Talk on the topic 'Green Crackers: The Lesser of the Two Evils. Can We Celebrate our Festivals without Crackers?'. Prof (Dr) S Kanmani, Professor and Director, Centre for Environmental Studies, Anna University, Chennai delivered Invited Talk on the topic 'Challenges and Way Forward of Pollution Abatement in Fireworks'.

During the technical sessions, Special Invited talks were delivered by Dr N Sivasubramanian, Chairman, Madurai Local Centre & Council Member, IET and Former Senior Scientist and Chief General Manager, ISRO on 'An Overview of Green Fireworks for Future'; Prof (Dr) R Mohan Raj, Bharatidasan University, Trichy on the topic 'Environmental Impact of Fireworks: Exploring Trade-offs between Benign Technologies and Environmental Safety'; Dr R Bhima Rao, Council Member, IET and Formerly CSIR Chief Scientist and Advisor to Mineral Industries on 'Indian Raw Materials for Green Crackers: Critical Analysis on its Occurrence, Reserves, Exports and Imports'; Dr M Velan, Former Chairman, ENDB, IET and Special Invitee, ENDB, IET on 'Environmental Impact of Green Crackers'; Prof (Dr) Jeya Rajendran, Associate Professor in Chemistry, Loyala College, Chennai on 'Hazard Assessment of Firecrackers: Green Crackers with New Formulations'; Dr N K Gopalsamy, Former General Manager (Safety), IPEC/ISRO, Mahendragiri on 'Safety in Fireworks'; Dr L John Berchmans, Chief Scientist & HoD (Rtd), CSIR-CECRI - Consultant Scientist, Electrometallurgy Division, Karaikudi on 'Innovative Approaches for the Development of Technologies and Products for Reduced Emission Firecrackers'; Prof (Dr) A Anitha, Assistant Professor in Chemistry, VVV College for Women, Virudhunagar; Prof (Dr) S Muthukumar, Professor and Dean (R&C), NIT Trichy on 'Innovations, Startups and Funding for MSMEs'; Prof (Dr) G Gnanakumar, Professor in Physical Chemistry, Madurai Kamaraj University on '3D Catalytic Architecture for Fuel Cell-based Green Energy Production and Ms Dharshini, NMS Sermathai Vasani College for Women on 'Environmental Challenges for Green Fireworks Manufacturing'.

Technical sessions were organised on diversified topics, namely; Chemistry in Fireworks and Safety; Green Fireworks Chemistry and Technology; Fireworks Occupational Hazards and Innovation on Green Strategy, where papers were presented on Development of Environmental Friendly Crackers – Modified Green Formulations; Surface-enhanced Raman Scattering for Mixing State Characterization of Individual Fine Particles present in the Atmosphere caused by the Fire Crackers; Extended Experimental Analysis of Tamarind Seed based Flash Powder for Green Fire Crackers; Impact of Nano-sized Chemical composition of Fire Crackers for Environmental Safety; Hazard Assessment of Fire Crackers; Disposal of Fire Crackers Waste; Innovative Approaches for the Development of Technologies and Products for Reduced Emission Firecrackers; Safety Audit and Risk Assessment in Fireworks Industry; Sustainable Electronic Waste Disposal and so on.

*Recommendations emanated from the National Convention include;*

*Barium nitrate used for the Green illuminated fireworks, crackers and sparkles manufacturing has to be replaced with alternate chemicals / salts since it gives rise to health hazard and environmental related issues. Heavy metals like barium and per chlorate salts used in fireworks are to be dispensed with.*

*Alternate means for benign green emitting chemicals for fireworks are recommended as*

*The combination of amorphous boron in the presence of potassium nitrate (B/KNO<sub>3</sub>), a widely known method of generating green light, i.e. a mixture of Amorphous boron based salts and suitable oxidizer; Boron Carbide serves as a green colorant and fuel in the presence of potassium nitrate oxidizer and an epoxy binder. This environmental friendly formulation is very stable to impact, friction, and electrostatic discharge, and has a high thermal stability; Magnesium di Bromide be applied (MgB<sub>2</sub>) as a barium-free alternative for the pyrotechnic generation of green light. Formulations employing KNO<sub>3</sub> as the oxidizer, MgB<sub>2</sub> as the fuel, and various binders and additives are investigated and reported; IsoCynic Acid, Copper Sulphate and Boron Tri Oxide with Sodium Carbonate and Aluminium- Magnesium*

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## Battery Energy Storage System

**Tamilnadu State Centre**, IEI organized Thirty-seventh National Convention of Chemical Engineers during September 09-10, 2022 in association with the Centre for Energy Storage Technologies, Anna University at Raman Auditorium, ACT Campus, Anna University, Chennai. A National Seminar was also organized on the occasion on the theme **Battery Energy Storage System**. Dr G Ranganath, Chairman, CATE, Council Member, IEI & Syndicate Member, Anna University graced the inaugural function as the Chief Guest and inaugurated the program. Dr R Jayavel, Dean – ACT Campus, Anna University, Chennai was the Guest of Honour. Prof (Dr) Ms Shilpa Tripathi, Chairman, Chemical Engineering Division Board, IEI presided over the function. The programme was started with invocation and



lighting of lamp by the dignitaries on the dais on 9 September 2022 at Anna University. Mr S Kannan, Chairman, Tamilnadu State Centre, IEI delivered the welcome address. Dr N Balasubramanian, Director, Centre for Energy Storage Technologies (CEST), Anna University, Chennai & Co- Chairman, Organizing Committee, 37<sup>th</sup> National Convention of Chemical Engineers briefed the audience about the National Convention. Mr D Gokul, Joint Secretary, IEI TNSC and Convenor, 37<sup>th</sup> National Convention of Chemical Engineers delivered the thematic address. On the occasion, the IEI Young Engineers Award in Chemical engineering Division for the year 2021-22 was presented to; Mr Santosh Deb Barma, Senior Scientist, Mineral Processing Department, CSIR-Institute of Minerals & Materials Technology, Acharya Vihar, Bhubaneswar, Odisha and Dr Somak Chatterjee, Assistant Professor, Chemical Engineering Department, Birla Institute of Technology and Science, Pilani, Rajasthan. For the year 2022-23, the recipients of IEI Young Engineers Award in Chemical Engineering Division are; Ms Pallishree Prusti, Senior Scientist, Mineral Processing Department, CSIR-IMMT Bhubaneswar, Odisha and Dr Gautham Madenoor Ramapriya, Senior Scientist, ABB Ability Centre, Brigade, Southfield, KEB Colony, Industrial Area, Hoodi, Bangalore. A panel discussion was organized on the topic 'An Approach towards Sustainable Energy in India'. Mr K N Sivaraju, Honorary Secretary, Tamilnadu State Centre proposed the vote of thanks.

On 10 September, the programme was started with the Award Function, when Thiru Siva V Meyyanathan, Hon'ble Minister for Environment - Climate Change and Youth Welfare and Sports Development, Government of Tamilnadu graced the function as Chief Guest. Dr T M Gunaraja, Past President, IEI and Prof (Dr) R Velraj, Vice Chancellor, Anna University, Chennai graces the occasion as Guests of Honour. On the occasion, Dr C K Asnani, Chairman & Managing Director, Uranium Corporation of India Limited, Mumbai, Department of Atomic Energy, Government of India; Dr G A Pathanjali, Managing Director, High Energy Batteries (India) Limited, Pudukottai, Tamilnadu and Dr N Balasubramanian, Professor and Director, Centre for Energy Storage Technologies, Centre for Excellence Building, Anna University, Chennai were felicitated due to their commendable contributions

in the field of chemical engineering. The Acharya Prafulla Chandra Ray Memorial Lecture was delivered by Padmabhushan Dr A Sivathanu Pillai, Founder CEO & MD, BrahMos Aerospace, Former Chief Controller (R&D), DRDO, and Honorary President, PMA – India on the topic 'Powering for a Clean Planet'. Mr Kaushik A Palicha, Managing Director, Ram Charan Company Private Limited, Chennai delivered the Keynote Address on the topic 'Innovation in Technology & Competitive Advantage from India'. On the occasion, the Souvenir contains the full text of the papers was released in august presence of the dignitaries. Also, the fourth issue of Annual Technical volume in Chemical Engineering Division on the theme 'Sustainability Mechanisms for Recycling of Wastewater: Chemical Engineering Aspect' was released in presence of the dignitaries.

During technical sessions, Mr C Kannappan, Chief Executive Officer, Switching Battery Inc delivered lecture on the topic 'About Switching Battery Operations'; Dr K Pandian, Professor and Head, Department of Chemistry, Madras University delivered lecture on 'Development of Materials for Direct Methanol Fuel Cell (DMFC)'; Dr E Bhaskaran, Joint Director (Engineering) / General Manager, District Industries Centre (DIC), Department of Industries and Commerce, Government of Tamilnadu on 'Lead Acid Battery Management Storage System and its Sustainable Manufacturing and Recycling'; Dr G A Pathanjali spoke about High Energy Batteries (India) Limited. Dr Somak Chatterjee, Young Engineer Awardee delivered his presentation on 'Functional Materials for Water Purification'.

Also papers were presented on Effect of Temperature on Reservoir Rock Wettability Alteration; Enrichment of Low-Grade Graphite Utilizing Plastic Waste Derivatives for Battery Application; Ca<sub>2</sub>Fe<sub>20</sub>5 based Composite



Cathode for IT-SOFC Application; Study of Bio-Carbon based Humic acid extracted from Waste Coal to replace Graphene Oxide as a Cathode Material in Li-S Batteries; Application of Bioelectro-chemical Cell for Clean Energy Generation and Treatment of Toxic Wastewater; Super Chemical Technologies for making Membrane or Electrode Material for Next Generation Mg & Mg-Air Batteries; Effect of Substitution of Ru and RuO<sub>2</sub> in MnO<sub>2</sub> Electrode for Super-capacitor Applications; Development of Cathode Materials for Lithium Sulphur Battery – EV Applications; Carbon Nano architectonics in Fuel Cell Application and Energy Generation; Review on Onsite Hydrogen Production and Embrittlement; Fabrication of Lab based Pouch type Super Capattery device using Nickel Cobaltite/rGO Nano Composites as an Electrode Material for Energy Storage Applications.

During the valedictory Function, Dr S Gopukumar, CSIR Emeritus Scientist, Central Electro-Chemical Research Institute (CSIR- CECRI), Karaikudi graced the function as Chief Guest. Recommendation emanated from the technical deliberation were presented by Dr R Saravanathamizan, Professor, CEST, Anna University & Co- Chairman, Technical Committee.

## Technologies for Green Fireworks – Holistic Approach towards Environmental Challenges

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mixture of fuel. Are used for both military and civil applications to realize green fireworks.

A well laid out performance specification for each type of crackers in terms of light, sound, heat and energy has to be made available to all concerned.

A dedicated test facility to evaluate the performance of green fireworks is essential and the same to be established closer to manufacturing facilities.

Periodic awareness programme has to be provided for skilled workers to prevent accidents.

## Innovative Textile Materials

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and opined that Textile Engineering Division of the Institution would provide the larger platform to share the views and thoughts with academia, R&D and industry in an effective manner. Mr Sushil Kumar Gupta in his address focused on the skills, expertise and talent of the workforce and entrepreneurs for development in textile industry. Mr Mayur Maheswari, IAS in his address called upon for establishment of innovate textile manufacturing units in Uttar Pradesh and ensure the availability of all infrastructural facilities for the entrepreneurs. On the occasion, Prof Saiyad Mujaffar Inshtiaque, Emeritus Professor, Department of Textile and Fibre Engineering, Indian Institute of Technology Delhi; Dr Arindam Basu, Director General, Northern India Textile Research Association, Ghaziabad and Mr Harish Goswamy, Chairman & Managing Director, Rex-Tone Industries Limited & Globex Laboratories (R&D) Limited were felicitated as Eminent Engineering Personalities for their immense contribution in the field of textile engineering. The recipients of IEI Young Engineers Award in Textile Engineering Division for the year 2021-22 are; Dr (Ms) Sanchi Arora, Manager – R&D (Coated Abrasives), Grindwell Norton Limited, Saint Gobain, Bengaluru, Karnataka and Mr Ashish Appaso Hulle, Assistant Professor, DKTE Society's Textile & Engineering Institute, Ichalkaranji, Maharashtra. Recipient of IEI Young Engineers Award in Textile Engineering Division for the year 2022-23 is Dr Unsanham Mawkhlieng, Assistant Professor, Department of Textile Design, National Institute of Fashion Technology, Shillong, Meghalaya. On the occasion, a Technical Proceedings was released in the august presence of the dignitaries, which contains the full text of papers presented during the technical sessions. Also, the fourth issue of Annual Technical Volume of Textile Engineering Division on the theme 'Circularity in Textile Design and Sustainable Textile Products' was released on the occasion. Earlier, Mr Vivek Asthana, Chairman, Kanpur Local Centre, IEI delivered the welcome address. Prof Mukesh Kumar Singh, Convener of the event briefed the audience about the theme of National Convention. Mr Rama Kant Yadav, Honorary Secretary, Kanpur Local Centre proposed the vote of thanks.

The Dr B K Chakrabarti Memorial Lecture was delivered by Prof Abhijit Majumdar, Chair Professor, Decision Sciences, Professor, Department of Textile and Fibre Engineering, Indian Institute of Technology Delhi on the topic 'Material and Design Body Armour: Current Status and Future Challenge'. Prof Majumdar in his lecture, stated that body armour is a protective device use to safeguard an individual against the destructive effects of weapons and projectiles. He explained that body armours are classified under two heads, namely soft and hard; The former is used when the threat level is low ( $9 \times 19$  mm), the latter is apt to ensure protection when the threat level is very high (AK47 HSC  $7.62 \times 39$  mm). He mentioned that in recent years, there has been immense development in materials and designs of body armour. However, to ensure effective protection even against  $9 \times 19$  mm bullet, at least 15-20 layers of high-performance fabrics are required and the areal density of soft armour panel (SAP) lies in the range of 4-5 kg/m<sup>2</sup>, he added. Prof Majumdar went on to explain that the areal density of hard armour panel lies within the range of 15-40 kg/m<sup>2</sup> depending on the threat levels; The most popular standard (NIJ 101.06) for the evaluation of body armour is prescribed by National Institute of Justice (NIJ), USA; Recently, Bureau of Indian Standard (BIS) has developed the Indian standard IS 17051:2018 and it is now being followed for the qualification of body armour in India.

Prof S M Ishtiaque, Emeritus Professor, Department of Textile & Fibre Engineering, Indian Institute of Technology, Delhi delivered State of the Art Lecture on the topic 'New Trends in spinning /IIT-Delhi'. In his lecture, Prof Ishtiaque focused on the major changes in the field of spinning technology, namely opening of tufts in blow room. He explained the significance of opening of tufts, which is the major cause of imperfections in yarn. Prof Mukesh Kumar Singh delivered Keynote address on the topic 'Innovative Textile Materials/UPTTI-Kanpur'.

A panel discussion was organized on the occasion on the topic 'Future of Textile Engineering', in presence of Prof (Dr) Sadhan Chandra Ray, Chairman,

TXDB, IEI, Dr G Nalankilli, Director, Uttar Pradesh Textile Technology Institute (UPTTI) Kanpur and Chairman, Technical Committee, Prof S M Ishtiaque, and Chairman of the host Centre.

Fifty four Papers were presented during ten technical sessions on diversified topics. Seven Invited lectures were presented on Green Fibre; Development of Electrospun Nano Fibre Mat through Needleless Electrospinning as a Filtration Layer for Cotton-based Face Mask; Abrasion Behaviour of Woolen Hand Tuffed Carpets; Application of Smart Textiles in Health Monitoring and Sportswear; Innovation in Defence Textile Products etc.

The first technical session was chaired by Prof Abhijit Majumdar, IIT Delhi. The second technical session was chaired by Prof Sadhan Chandra Ray, Chairman, TXDB, IEI. The third technical session was chaired by Mr Millind Patil, Member TXDB, IEI. Prof Prashant, UPTTI, Kanpur, chaired the fourth technical session. Mr Deepak Kulkarni, Member, TXDB, IEI chaired the fifth technical session. The sixth technical session was chaired by Prof S M Ishtiaque, IIT Delhi. The seventh technical session was chaired by Mr Arunabh Chowdhry, Scientist 'F', DGQA, Kanpur. The eighth technical session was chaired by Dr Arindam Basu, Director General NITRA, Ghaziabad. Prof S P Mishra, President, The Textile Association (I), Odisha Unit chaired the ninth technical session and last technical session was chaired by Dr G Nalankilli, Director, UPTTI Kanpur.

During the Valedictory Function, the Valedictory Address was delivered by Prof J Ramkumar, Department of Mechanical Engineering, IIT Kanpur and Former Chairman, Kanpur Local Centre.

*Recommendations emanated from the National Convention are as follows.*

*Textile industries are recommended to setup strong and vibrant Research and Development departments at their manufacturing plants.*

*Textile industries are advised to build Memorandum of Understanding (MoU) with academic and institutional partners to accelerate the research and development activities in a symbiotic manner.*

*Industry and professional institutions should be in an excellent synergy, so that there is a good exchange of technical know-how and other R&D related endeavours.*

*Academic institutions are advised to introduce at least two programmes at undergraduate level (B.Tech-1, for industrial uses and B.Tech-2, for civil and medical utility) in addition to the conventional branches of Engineering.*

*A single window clearance to promote the establishment of technical textiles is strongly recommended.*

*It should be made mandatory to the departments which are entrusted with the road construction to apply geo-textiles for more durable road construction. No road should be constructed without the use of geo-textiles.*

*All the tent fabrics must be treated with the flame retardant finish to fight the fire hazards and ensure the safety of human life.*

*Government should devise a suitable price mechanism for medical textiles so that it could benefit the common man. Textile technologists, scientists and researchers they should pool their efforts and knowledge together for the best outcome in the field.*

*Polytechnic colleges of urban and rural areas should focus on skill development by engaging their students more on the practical assignments. Industries are also advised not to exploit the situation and provide the proper salary, wages and perks to retain the technical force for longer periods with the same organisation and to create an employer loyalty.*

*Fibre-reinforced composites are new materials in the field of textiles that need immediate support and attention for a sound and purposeful endeavours in research and development and consequent manufacturing.*

## Solar Energy for Future Engineers & Architects

South Gujarat local Centre, IEI organized One Day Workshop on the theme **Solar Energy for Future Engineers & Architects**, in association with A Y Dadabhai Technical Institute (Polytechnic), Surat under the aegis of Mechanical Engineering Division on 25 August 2022 at Surat. Chief Guest of the event, Mr Shaheedul Hasan, COO, KPI Green Energy Limited, in his address, explained the significance of the theme of the Workshop and further focused on the importance of solar energy applications. The programme was started with welcome address delivered by Prof Ketankumar D Panchal, Honorary Secretary, South Gujarat Local centre, IEI. During the technical session, six technical papers were presented as follows.

Dr Shabbir Bohra, Professor, Sarvajani College of Engineering & Technology and Dr S A Channiwala, Former Professor, Department of Mechanical Engineering, SVNIT Surat presented paper on the topic "Microgrid-Introduction, Planning & Modelling for Techno Economic Assessment". The speakers explained that there has been a revolution in the generation of electricity from renewable sources. They stated that wind, hydro, tidal, biomass and solar power generating technologies are the most feasible alternatives for power generation. The speakers opined that large scale electric power generation system is one of the most significant tool for economic and technical growth of a country; Due to this, energy demand



is increasing and the consumption rate of fossil fuels is more than the production rate. Projections show that out of all fossil fuels, liquid oil and natural gas will be depleted by the little later half of the next century; Hence, implementation of green energy technology is the need of the hour to fulfill the current and future energy demand within the stringent emission norms,

they added. They further explained Gasification, a clean energy technology, which produces gas that preserve the heat of combustion value of the feed stock; In Gasification, a set of chemical reactions utilize limited oxygen to convert a carbon-containing feedstock into a synthetic gas, or syngas; Syngas consists of  $CH_4$ ,  $CO$  and  $H_2$  which are fired easily in the furnace burners and offers clean combustion without any particulate emissions; Gasification improves overall conversion efficiency by 1-3 % and reduces particulate emissions and  $CO_2$  emissions by 50-80 % and 10-30 %, respectively. Gasification enables to gain Carbon Credit for under developed countries. Preliminary results show that through the use of gasification,  $CO_2$  emission reduces by 28.24 %, which implies that 1 million tons of coal gasified could reduce 2.1824 million tons of  $CO_2$  emissions which will earn 2.1824 million carbon credits. Prof K H Patel, Head, Mechanical Engineering Department, A Y Dadabhai Technical Institute (Polytechnic) delivered expert talk on 'Low Carbon Economy' and explained the pollution situation in India and globally. He discussed on the capacity and efficiency of power plants, low carbon economy, carbon credit, clean coal technology and so on.

Prof K D Panchal delivered presentation on the topic "Solar Energy for Future Architects" and stated that construction industry accounts for 40% of annual greenhouse gas emissions due to its high carbon embodiment and carbonated energy demands; Building-integrated photovoltaics (BIPV) is a sustainable solution to address these concerns and to contribute to a net-positive world. He added that this advanced technology can be applied in solar building envelopes, skylights, windows, and balcony railings to produce green energy. Mr Mahmedsaid A Sheikh, Training and Placement Officer, A Y Dadabhai Technical Institute (Polytechnic) discussed on Energy Audit in renewable energy sector, Industrial Energy Audit etc. Mr Dinanath Akela, competent Person for Inspection & Certification of Boiler, Central Boiler Board – New Delhi, Certified Energy Manager, BOE & NDT Level II in RT & UT deliberated on 'Future Fuel & Green Hydrogen' and stated the challenges, that the world is facing about global warming, carbon emission emission and explained carbon neutrality. He further explained the applicability of green hydrogen fuel. Mr Bhavin Desai, Consultant, delivered lecture on 'Green House using Renewable Energy and focussed on greenhouse effect, type of materials used in green house envelope, application of solar, wind, tidal and geothermal energy etc. Dr Jignesh G Vagharia, Chairman, South Gujarat Local Centre, IEI summarized the proceedings of deliberations. Prof Ketankumar D Panchal, Honorary Secretary, South Gujarat Local Centre, IEI proposed the vote of thanks.

## EPC Contract – A Comprehensive Approach



Jharkhand State Centre, IEI organised One Day Workshop on the theme **EPC Contract - A Comprehensive Approach** on 7 May, 2022 in Residency Hall, BNR Hotel, Ranchi under the aegis of Civil Engineering Division. Mr

Sunil Kumar, IAS, Secretary, Road Construction Department, Government of Jharkhand graced the function as Chief Guest.. Mr W Q Faridi, Chief Engineer, National Highway Wing, Road Construction Department, Government of Jharkhand and Mr Abhijeet Kumar, Regional Officer, Ministry of Road Transport & Highways [MORT&H] delivered addresses on the occasion. The program was started with the welcome address delivered by Mr Mohammad Iquebal Alam, Chairman, Jharkhand State Centre and Council Member, IEI, followed by lighting of the lamp by the dignitaries present on the dais. Mr Prashant Deva, Convener introduced about the theme of the Workshop. The Chief Speaker of the session was Mr A K Srivastava, Former ADG, MORT&H and Advisor to NHAI, New Delhi. Mr Shashank Kumar, Former Executive Director, NHIDCL and Sr. Vice President, ICT, New Delhi was present in the event and addressed the audience regarding different aspects of EPC contract. The Valedictory Function was chaired by Mr Shivanand Roy, Council Member, IEI. Mr Manoj Kumar, Honorary Secretary, Jharkhand State Centre proposed the Vote of Thanks.

## Advances in Design and Manufacture of Plastic Injection Moulds

Telangana State Centre of the Institution organized Technical Webinar on the theme **Advances in Design and Manufacture of Plastic Injection Moulds** on 05 May, 2022, under the aegis of Production Engineering Division Board [PRDB], IEI. Mr A Dayanand Reddy, Managing Director, Vasantha Tool Crafts Private Limited, Hyderabad graced the function as Chief Guest. Panelists of the event, Mr N Suresh Kumar, DGM, (Design & Development), Vasantha Tool Crafts Private Limited; Mr T Phanindra, Senior Manager (Design & Development), Vasantha Tool Crafts Private Limited and Mr Paul Rithwik, Assistant Manager (Design & Development), Vasantha Tool Crafts Private Limited shared their views and expertise with the audience. Dr G Chandra Mohan Reddy, Professor, Department of Mechanical Engineering, CBIT Hyderabad moderated the session. The programme was started with welcome address delivered by Mr B Brahma Reddy, Chairman, Telangana State Centre, IEI. Dr S Satyanarayana, Chairman, Production Engineering Division Board,



Mr N Suresh Kumar

IEI in his address discussed the application of automation and robotics in manufacturing, different injection moulding processes and applications etc. Dr G Ranganath, Chairman, CATE, IEI in his address stated that advancements in plastic injection molding technology allow the manufacturers greater flexibility and sophistication in design of intricate components with required precision and accuracy. He mentioned that sustainable and eco-friendly plastics are widely used for cutting edge molding technology and plastic injection molding becomes more complicated with improved designs. He further explained that the development of engineered resins over the last few decades have brought new opportunities for plastic injection molding to become a dominant material choice for manufacturing in many industries. The settings and optimization of the injection molding process dictate the geometric precision and mechanical properties of the final products; therefore, sensing, optimization, and control of the injection molding process have a

crucial influence on product quality, he added. Dr H O Thakare, President, IEI in his address stated the advantages of plastic injection moulding, which include; high tolerance precision, repeatability, wide range of material selection, low labor cost, minimal scrap losses, and little need to finish parts after moulding. Chief Guest and Keynote Speaker of the session, Mr A Dayanand Reddy, delivered lecture on the topic 'Over view of Plastic Die Industry'. In his address, Mr Reddy explained about the single used plastic, rigid plastic articles, biodegradable plastic etc. He gave an overview of design and development of moulds, different aspects of mould design, Flow analysis, heat treatment of



Mr Paul Rithwik

moulds etc. He explained different mould machining technologies, which include thread and gear grinding, Wire cut EDMs, CAM and CMM.

Mr T Phanindra delivered lecture on the topic 'Design Techniques and use of Advanced Software for Mould Industry'. In his lecture, Mr Phanindra lucidly explained the working principle of injection mould to produce plastic products. He discussed application of simulation software in moulding industry and its advantages in terms of accuracy and cost effectiveness. Mr Phanindra elaborated further different stages of mould design and manufacturing, which include 3D design for plastic components, flow simulation, selection of mould material etc. He explained the scope and functioning of Creo 7.0, Unigraphics, Solid Works, CATIA, AUTOCAD etc. He explained manufacturing of plastic components with number of examples and case studies. He discussed different moulding defects in the finished product, namely Airtraps, Weld lines etc and the methods to minimize the same. He also explained the function of different runner systems, which include cold runner, semi-hot runner, fully hot



Dr G Chandra Mohan Reddy

runner etc. He further explained the application of complicated high production moulds, which include Stack moulds and Rotary moulds.

Mr V Paul Rithwik delivered his presentation on the topic 'Manufacturing Materials and Coating in die Mold Industry'. He had started his lecture with the manufacturing procedure of plastic injection molds, which include procurement of raw material; Block-up machining of various molded parts; Surface Grinding, Cylindrical Grinding; High Speed Milling, CNC Milling; EDM, Wire cut EDM; 3D Printing, Robotics; Polishing, Mould Assembly, Quality Assurance and so on. He explained the desirable properties of mold material with high conductivity with faster heat dissipation and low cycle time. He explained application of Stavax, Mirrax for high glossy surface finish; Orvar Supreme for close guiding parts; Unimax for high hardness requirement; S7 for spring steel characteristics; Moldmax for high conductivity and heat transfer; Ramax, P20, C45 for mold base making etc. He explained LASER Sintering and Conformal Cooling of injection molds. Conformal cooling makes use of cooling lines in injection mold, that curve and closely follow the geometry of the part to be produced; Conformal cooling is also the important tool to help decrease rejects; Moreover, due to uniform part cooling, molded-in stress can be reduced which produces a stronger warpage free part. The speaker concluded his lecture with the application of heat treatment and different protective coating procedure of plastic parts, which include TiN coating, CrN coating, hard carbon coating etc.

Mr N Suresh Kumar, delivered his lecture on the topic 'Quality Systems in Die Mould Industry'. He had started his presentation with the scope and functioning of Quality Assurance, including stage inspections starting from raw materials to finished products, inspection of material properties etc. He also explained the scope and functioning of process capability studies of plastic components, control of non-conformity of the products, mould qualification, customer complaints and resolutions etc. While deliberated on mould qualification, Mr Kumar explained that when the plastic parts are approved dimensionally as well as in fit & functional tests, customers are invited to witness the mould running and its smooth functioning, known as mould qualification; Once the mould is qualified, dispatch procedure takes place.

### Advances in Design & Manufacture of Plastic Injection Moulds



Courtesy by Mr N Suresh Kumar

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## Recent Advances in Manufacture of Aerospace and Automotive Components

Coimbatore Local Centre, IEI organised One Day Workshop on the theme **Recent Advances in Manufacture of Aerospace and Automotive Components** on 13 August 2022 at Coimbatore under the aegis of Production Engineering Division. Dr Devendran Thirunavukarasu, Technical Director, ST Advanced Composites Private Limited, Chennai graced the function as Chief Guest. In his address, Dr Thirunavukarasu mentioned about the growth of Indian industries in aerospace and automotive sectors and emphasised the role of Production Engineers in the development of materials and manufacturing methods, useful for aerospace and automotive industries. The programme was started with the welcome address delivered by Dr M Senthilkumar, Past Honorary Secretary, Coimbatore Local Centre, IEI & HoD, Department of Production Engineering, PSG College of Technology, Coimbatore. Dr S Pratheesh Kumar, Co-convenor of the programme & Assistant Professor, Department of Production Engineering, PSG College of Technology, Coimbatore briefed the audience about the objective and theme of the Workshop. During the Technical Sessions, Mr Srinivasan, Deputy General Manager (Production), Larsen &



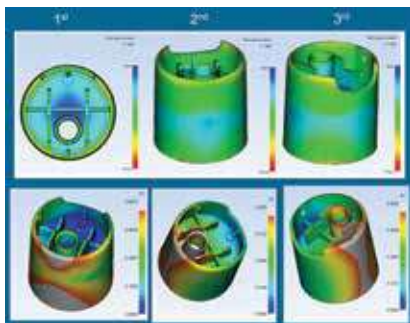
Toubro Limited, Coimbatore spoke on 'Advancement in Machining Technologies for Aerospace Industry'. In his lecture, the

speaker focussed on the property enhancement of fabricated materials and standards applied in aerospace industry. He also narrated the importance and challenges in machining of aerospace components with case studies, including its criticality with respect to dimensional accuracy. He further discussed current trends and innovations in manufacturing of components for aerospace industry. Dr Devendran Thirunavukarasu, delivered lecture on 'Advances in Composite Manufacturing and its Challenges'. With suitable case studies, he explained the challenges in manufacturing components using composite materials. He further discussed on the technical requirements for composite components like layer-by-layer stacking, orientation, dimensional accuracy and strength factor. He offered opportunities for students' internship in the field of composite manufacturing. Mr E Sreedhar Kumar, Senior Manager, PSG TIFAC CORE delivered lecture on 'Recent Advancement in Additive Manufacturing of Aerospace Components'. In his lecture, he gave an overview on the process variants, materials used and components fabricated in additive manufacturing. He also mentioned about the challenges in additive manufacturing and the competitiveness of Indian industries. He also briefed about the current trends and potential opportunities for engineers in the area of Additive Manufacturing. Mr Suresh Mishra, Head - Composites, Lakshmi Machine Works (LMW), Coimbatore spoke on 'Current Trends in Composites Manufacturing and its Contribution in Aerospace Sector' and discussed on the composite manufacturing terminologies and the needs of Indian market in composite domain. He also mentioned about the composite manufacturing facilities at LMW Coimbatore. A Souvenir was released on the occasion in the form of CD. The Vote of Thanks was given by Dr J Krishnamoorthi, Honorary Secretary, Coimbatore Local Centre, IEI.

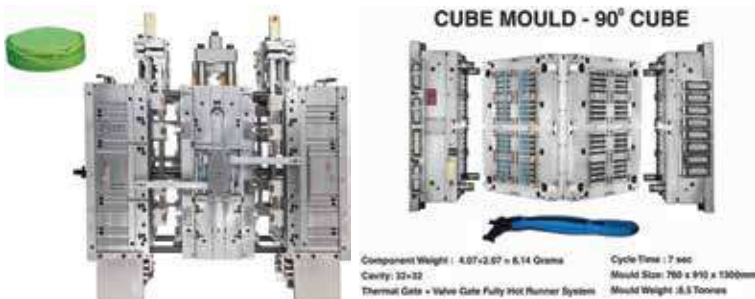
## Advances in Design and Manufacture of Plastic Injection Moulds

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### Gate location



### High complicated and high production moulds



Courtesy by Mr T Phanindra

Moderator of the session, Dr G Chandra Mohan Reddy summed up the Proceedings of deliberation. Dr Enti Ranga Reddy, Chairman, Mechanical Engineering Division Board IEI was present on the occasion and addressed the audience. Mr B Brahma Reddy, Chairman, Telangana State Centre delivered the concluding remarks. Dr G Venkata Subbaiah, Honorary Secretary, Telangana State Centre proposed the vote of thanks.

### High end EDM and Wire EDM Machine for High accuracy



### EOS Machine, For conformal cooling (Additive Manufacturing)



Courtesy by Mr V Paul Rithwik

## Efficient Industrial Management - Need of the Hour

**Bhilai Local Centre**, IEI organized Technical Webinar on the theme **Efficient Industrial Management - Need of the Hour** on 13 March 2022 under the aegis of Production Engineering Division. Panelists of the Webinar were Er B M K Bajpai, Ex- ED WORKS, Bhilai Steel Plant, Chhattisgarh; Dr S D Bharti, Professor, Rungta College of Engineering & Technology, Bhilai, Chhattisgarh and Dr Nishant Yadav, Associate Professor, Department of Civil Engineering, BIT, Durg, Chhattisgarh. Dr Nagendra Tripathi, Honorary Secretary, Bhilai Local Centre, IEI moderated the session. The programme was started with the welcome address delivered by Mr Pradeep Kumar Tiwari, Chairman, Bhilai Local Centre, IEI. Mr Tiwari, in his address emphasized on utilization of human capital to enhance organizational efficiency and productivity. Dr S Satyanarayana, Chairman, Production Engineering Division Board, IEI, in his address focused the four components of management,



Er B M K Bajpai

namely planning, organizing, coordination and control. He discussed the impact of efficiency on productivity, output and organizational effectiveness. He further deliberated on green manufacturing, sustainable manufacturing, digital manufacturing, role of disruptive technologies, smart factories concept, application of cyber physical systems etc. He further discussed on customized products, predictive manufacturing, pro-diagnostics and self-assessment of machines and equipment and latest manufacturing practices.



Dr S D Bharti

Dr Nishant Jadav deliberated on management practices in construction industry and explained the effects of cost & schedule overruns in construction industry. He emphasized the need of digitization in construction industry and stated that the digital landscape in construction industry is changing at an ever-increasing speed. He stated that according to the data obtained from International data Corporation (IDC), 35% of the existing construction giants in India have a clear roadmap to transform their way for doing business by



Dr Nishant Jadav

means of digitization shortly. He also discussed the challenges in digitization of Indian construction industry.

Dr Satyadhama Bharti started his lecture with the importance to achieve the organizational aims, objectives and goals. He said that organizational efficiency and improved productivity depends on three principle components, increasing speed and quality and decreasing cost. He elaborated further that

industrial efficiency is influenced by six major parameters, namely technological development, availability of finance, quality and human resources, managerial talent, Government Policy and natural factors. He mentioned the key factors for technological development as degree of mechanization, technical know-how, product design and development etc. He further stated that improvement in any of the technological factors will contribute towards the increase in industrial efficiency and productivity. He also emphasized on good flow of financial resources to execute the strategic plans to increase the productivity and overall efficiency of the industry.



Dr Nagendra Tripathi

Er B M K Bajpai in his address shared his vast experience in steel industry and discussed the significant achievement of Bhilai Steel Plant during his tenure. He stressed on formulation of strategy through subsequent benchmarking and exchange of views and ideas with reputed national and international organizations. He explained the significance of professional competence, continuous improvement and upgradation of technologies and skills and

selection of right alternative to obtain the most optimum feasible solution. Er Bajpayee shared his views with the august audience about the development of leadership skills and emphasized on sincerity, integrity, innovative and positive mindset and fruitful interaction at all hierarchical levels to achieve the organizational goal. Dr Nagendra Tripathi, Honorary Secretary, Bhilai Local Centre and Moderator of the Webinar summed up the Proceedings of deliberation and at the end of the session, proposed the vote of thanks.

## Environment Health and Safety

**Tripura State Centre**, IEI organized Technical Webinar on the theme **Environment Health and Safety** on 7 April, 2022 under the aegis of Chemical Engineering Division as a part to celebrate the 32<sup>nd</sup> Foundation Day of Tripura State Centre, IEI jointly with the Department of Chemical & Polymer Engineering, Tripura University, Department of Chemical Engineering, National Institute of Technology (NIT) Agartala and Department of Bio Engineering, NIT Agartala. Dr P K P Rupa, Head, Department of Material Science and Engineering, Tripura University graced the function as Special Guest. Er Santosh Deb Barma, Senior Scientist & Assistant Professor, Faculty of Engineering Sciences (AcSIR), Mineral Processing Department, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar; Dr Sachin Bhaladhare, Assistant Professor, Department of Chemical & Polymer Engineering, Tripura University (A Central University), Agartala and Ms Uttara Mahapatra, Research Scholar, Department of Chemical Engineering, NIT Agartala graced the function as Panelists. Dr Mriganka Sekhar Manna, Assistant Professor, Chemical Engineering Department, NIT Agartala was the Moderator of the session. The programme was started with welcome address delivered by Mr Chinmay Debnath, Chairman, Tripura State Centre, IEI. Dr Soma Nag, Chairman, Chemical Engineering Division, Tripura



Er Santosh Deb Barma

State Centre, IEI highlighted the activities of Chemical Engineering Division followed by introduction of Guests and Paper Presenters by Dr Bibhab Kumar Lodh, Organizing Secretary. Prof (Dr) Ms Shilpa Tripathi, Chairman, Chemical Engineering Division Board was present on the occasion and addressed the august audience. Mr Navinchandra B Vasoya, Past President, IEI graced the function with his august presence. In his address, Mr Vasoya mentioned that, prevention of hazards is an integral part of economic activities to ensure high safety and health standard at workplace, which is significant to improve business performance for new as well as existing industries. He stated that



Ms Uttara Mahapatra

Government regulates all economic activities for management of safety and health risks at workplaces and to provide measures so as to ensure safe and healthy working conditions for every working personnel in the nation; Government recognizes that safety and health of workers has a positive impact on productivity and economic as well as social development.

Er Santosh Deb Barma delivered lecture on the topic 'Sustainable Utilization of Mineral & Metallurgical Wastes: A Waste to Wealth Strategy'. Dr Sachin Bhaladhare deliberated on the topic 'Bio based and Biodegradable Polymers and their Environmental Impacts'. Er Uttara Mahapatra, Research Scholar, Department of Chemical Engineering, NIT Agartala delivered lecture on 'Application of Natural Rubber Industry Sludge towards Heavy Metal and Dye



Dr Sachin Bhaladhare

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## Development of Lithium Ion Battery/Sodium Ion Batteries for Commercial Applications

**Durgapur Local Centre**, IEI organized Technical Webinar, in association with NIT Durgapur on the theme **Development of Lithium Ion Battery/Sodium Ion Batteries for Commercial Applications** on 23 June 2022 under the aegis of Chemical Engineering Division. Dr Jaya Sikdar, Associate Professor & Head, Department of Chemical Engineering, NIT Durgapur graced the function as



Dr Sudeep Sarkar

Guest of Honour. Panelists of the session, Dr Sudeep Sarkar, Manager, Ola Electric Technologies Private Limited, Bangalore; Dr Ananta Sarkar, DST INSPIRE Faculty and Assistant Professor, Department of Chemical Engineering, NIT Durgapur and Dr Arnab Ghosh, Specially Appointed Assistant Professor at Yokohama National University, Japan shared their views and thoughts with the audience. Dr Bimal Das, Assistant Professor, Department of Chemical Engineering, NIT Durgapur moderated the session.

In the beginning, Mr Manas Majumder, Honorary Secretary, Durgapur Local Centre, IEI described the life sketch of Sir R N Mookherjee and explained his contribution to the nation and for the betterment of IEI. Mr Safikul Islam, Chairman, Durgapur Local Centre, IEI delivered the welcome address. Dr G Ranganath, Chairman, Committee for Advancement of Technology and Engineering [CATE], IEI explained the importance of Lithium Ion Batteries/ Sodium Ion Batteries and emphasized the commercial application of these batteries. He opined that the engineering knowledge developed for highly successful Lithium ion batteries



Dr Ananta Sarkar

can be leveraged to ensure rapid progress in this area, whereas different electrode materials and electrolytes will be required for dual intercalation systems based on sodium. Dr H O Thakare, President, IEI thanked the Centre



Dr Arnab Ghosh

for organizing the webinar and expressed his gratitude to Sir R N Mookherjee. He further explained that Sodium-ion batteries are constructed from relatively inexpensive and abundant materials, which are examined for their viability as the substitute to Lithium ion batteries to meet large-scale, stationary energy storage needs. Dr Bimal Das deliberated on the theme and objective of the Webinar and explained that Lithium Ion Batteries have gained very wide acceptance due to the need for batteries with higher energy density, long battery lifespan, and

high charging speed that will meet the energy requirements for extensive energy storage operations and utilization, in the fast-growing and advancing electrical, electronics and automobile industries. He stated that this Webinar provides an excellent opportunity to share and exchange ideas on topics of importance along with thought-provoking technical session.

Dr Sudeep Sarkar started his deliberation with the working principle of Lithium-ion batteries with the help of lattice structures: host matrix and Guest matrix. He nicely described the timeline of the development of lithium ion batteries stage by stage. Why these lithium and sodium ion batteries are important in India and what are the different applications of these types of batteries, were discussed thoroughly. Then he discussed on different parts of lithium-ion batteries and the associated problems and challenges to commercialize the product in Indian scenario. He also elaborated various steps involved in production of lithium-ion batteries. Dr Ananta Sarkar started his deliberation with the importance of Sodium-ion battery technology in Indian scenario. Then he elaborated on the basic working principle of sodium ion batteries, disadvantages of Sodium-ion batteries and the challenges and constraints for its commercialization. He further discussed about different electrode materials used in sodium-ion battery research and their relative advantages and disadvantages. Dr Sarkar explained, why Ammonium Vanadium Oxide (NVO) is considered as one of the good cathode materials for Sodium-ion batteries with their crystal structure. He further discussed the method of



Dr Bimal Das

improvement of NVO cathode's electrochemical performances by doping and chemical sodiation techniques. He further described the working principle of Sodium Titanium Oxide (NTO) anode materials, the problems encountered and the troubleshooting. Dr Arnab Ghosh, in his lecture explained the importance of batteries and different battery technologies, their advantages and disadvantages. He discussed the working principle and importance of Lithium-Sulfur batteries in current scenario and the advent of future research. He further talked about the fundamental problems associated with the Lithium-Sulfur battery and the different strategies applied to overcome these problems. He spoke on introduction of a new metal oxide coating procedure to overcome these problems. Dr Bimal Das summarised the Proceedings of deliberation. An interactive session was organised at the end of the session. At the end, Mr Manas Majumder, Honorary Secretary, Durgapur Local Centre, IEI proposed the vote of thanks.

## Environment Health and Safety

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Dr Mriganka Sekhar Manna

Removal from the Aqueous Environment'.

Highlights of the deliberations / discussions in brief are as follows.

- ❖ Based on the findings on research and studies, the industrial practices with regards to safety and product quality must be updated time to time.
- ❖ The requirements for the development of new methods and strategy in chemical, metallurgical, and mining industries should be taken care in the coming era.
- ❖ Proper planning and safety practices must be strictly enforced daily basis for quality and safety assurance, for protection of health.
- ❖ The complaint from the society around the chemical, metallurgical, and mining industries against the pollution and hazardous chemical

exposure should be readily accepted and addressed with responsibility and accountability.

- ❖ The monitoring of work permit system and the use of Personal Protective Equipment (PPE) should be encouraged to ensure safety and health of the engineers and workers.
- ❖ Proper training with certification of the workers engaged in industries and newcomers to the industry should be arranged and updated time to time.

The Moderator of the programme, Dr Mriganka Sekhar Manna, summarized the Proceedings of deliberation. The vote of thanks was offered by Dr Subhadeep Bhattacharjee, Honorary Secretary, Tripura State Centre, IEI. About 100 participants joined the event either virtually or physically. There was large-scale participation of faculty, students & practicing engineers and interactive session through online and offline platform also took place. Er. Aritrika Saha, M Tech Student, Department of Chemical & Polymer Engineering, Tripura University coordinated the programme.



# 37<sup>th</sup> INDIAN ENGINEERING CONGRESS

Chennai, December 16-18, 2022

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

Organized by

**The Institution of Engineers (India)**

Hosted by: **Tamilnadu State Centre**

For further details, please follow the website: <https://www.37iec.org>

and also the link below

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**37<sup>th</sup>**

**Indian Engineering Congress**

December 16-18, 2022, Chennai

Hosted by **Tamilnadu State Centre**

*Theme*

**Role of Engineers for Creating  
A Sustainable & Self Reliant  
India**

*Technical Partner*



Anna University, Chennai

*Venue:*

Hotel Le Royal Meridian, Chennai

For details please follow the link below

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## World Standards Day 2022



14 October 2022

*Theme:*

**A SHARED VISION FOR A BETTER WORLD**

The Sustainable Development Goals (SDGs), which project to address social imbalances, develop a sustainable economy, and slow the rate of climate change, are highly ambitious. To reach them will require the cooperation of many public and private partners, and the use of all available tools, including international standards and conformity assessment.

The intense battle against a persistent global pandemic revealed the absolute necessity of addressing the SDGs in an inclusive way, to strengthen our societies, making them more resilient and more equitable. Today, we are asking you to join us on a mission that affirms the importance of the SDGs to build back better. In this pursuit, standards are more relevant than ever.

The entire standards system is built on collaboration. It is testament to the power of cooperation and the belief that we are stronger than the sum of our parts. By working together, we are empowering people with real-world solutions to face sustainability challenges head-on.

It is in this spirit that we are engaging in a multi-year World Standards Day journey that showcases the many ways in which international standards contribute to the success of the SDGs.

We stand united to work together to accelerate the 2030 Agenda, with standards for the SDGs, and our 'Shared vision for a better world'.

# IEI DIARY



## Aerospace Engineering Division

Thirty-fifth National Convention of Aerospace Engineers on **"Smart Materials and their Applications in Aerospace Structures"**

Chandigarh, November 25-26, 2022

The Honorary Secretary, IEI, Punjab and Chandigarh State Centre, Plot No.1-A, Engineers Bhawan, Madhya Marg, Sector 19-A, Chandigarh 160019 [☎: 0172-2775418, E-mail: pcsc@ieindia.org, Website: www.ieichd.org]

## Architectural Engineering Division

Thirty-sixth National Convention of Architectural Engineers on **"Green Buildings, Innovation and Sustainability (NCGBIS)"**

Bhopal, November 19-20, 2022

The Honorary Secretary, IEI, Madhya Pradesh State Centre, Visvesvaraya Marg (Kasturba Hospital Road), PO : Habibganj, Bhopal 462024, [☎: 0755-2474572 / 2502987; E-mail:mpsc@ieindia.org; Website : www.mpscief.org]

## Civil Engineering Division

Thirty-seventh National Convention of Civil Engineers on **"Emerging Technologies and Seismic Concerns"**

Indore, October 16-17, 2022

The Honorary Secretary, IEI, Indore Local Centre, SGSITS Campus, 23, Sir M Visvesvaraya Marg (Park Road), Indore 452003 [☎: 0731-2434057, E-mail: indorelc@ieindia.org, Website: www.ieindia.org]

All India Seminar on **"Earthquake Resistant Structures"**

Coimbatore, October 12-13, 2022

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

All India Seminar on **"Air Quality Monitoring and Analysis: Challenges and Research Gap"**

Coimbatore, November 03-04, 2022

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

All India Seminar on **"Use of Green Technology in Road Construction"**

Ranchi, January 28-29, 2023

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO : Doranda, Ranchi 834002 [☎: 0651-2491344, Mobile: 9431382798, E-mail : jharkhandsc@ieindia.org, Website: ieijscjharkhand.org]

All India Seminar on **"Water Security: Challenges for Present and Future"**

Ranchi, February 25-26, 2023

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO

: Doranda, Ranchi 834002 [☎: 0651-2491344, Mobile: 9431382798, E-mail : jharkhandsc@ieindia.org, Website: ieijscjharkhand.org]

## Computer Engineering Division

All India Seminar on **"Recent Innovations on Natural Language Processing"**

Kanchepuram, October, 11-12 2022

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

Two Day Workshop on **"Driving Digital Transformation Through Data, AI and Machine Learning"**

Kanchepuram, October 13-14, 2022

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

Thirty-fifth National Convention of Computer Engineers on **"Cyber Security/Privacy"**

Bareilly, February 18-19, 2023

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

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]

## Electrical Engineering Division

Thirty-seventh National Convention of Electrical Engineers on **"Green Energy and Clean Energy for New India"**

Jabalpur, November 12-13, 2022

The Honorary Secretary, IEI, Jabalpur Local Centre, Vishvesvaraya Marg, South Civil Lines, In front of Old RTO Office, Jabalpur 482001 [☎: 0761-2678929, E-mail: jabalpurlc@ieindia.org]

All India Seminar on "National Campaign on Electrical Safety at Residential, Commercial & Public Building & Utility"

Kolkata, November 18-19, 2022

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

All India Seminar on **"Importance of Calibration and Concepts of Uncertainty Measurements as per ISO/IEC 17025:2017 Standards"**

Coimbatore, December 01-02, 2022

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG Tech Campus, Peelamedu,

Coimbatore 641004, Tamilnadu, [☎: 0422-2580733, E-mail: coimbatorelc@ieindia.org]

One Day Seminar on **"Industrial Automation"**

Kanchepuram, December 13, 2022

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

All India Workshop on **"Renewable Energy Integration with Energy Storage Systems"**

Tiruchirappalli, January 04-05, 2023

The Honorary Secretary, IEI, Tiruchirappalli Local Centre, Near Ganesa Bus Stop, BHEL Main Office Road, Opposite to 79 Building, Tiruchirappalli 620014 [☎: 0431-2554285 /2574022, E-mail: tiruchirappallilc@ieindia.org]

## Electronics and Telecom. Engineering Division

One Day Seminar on **"The Role of AI in the 5G Future"**

Hyderabad, October 15, 2022

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, Website: www.ieitsc.org.in]

All India Seminar on **"Recent Trends and Research Issues in Image Processing"**

Coimbatore, October 19-20, 2022

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

Thirty-seventh National Convention of Electronics & Telecommunication Engineers on **"The Impact of 5G: Creating New Value across Industries and Society"**

Hyderabad, November 18-19, 2022

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, Website: www.ieitsc.org.in]

All India Workshop on **"Design and Testing of Advanced Robots"**

Kanchepuram, December 19-20, 2022

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

One Day Seminar on **"Emerging Signal Processing Applications"**

Hyderabad, February 11, 2023

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

### Environmental Engineering Division

#### All India Seminar on "Recycle and Reuse of Wastewater"

Bareilly, October 17-18, 2022

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

### Marine Engineering Division

#### Thirty-sixth National Convention of Marine Engineers on "Contemporary Developments in Maritime Technologies"

Visakhapatnam, December 02-03, 2022

The Honorary Secretary, IEI, Visakhapatnam Local Centre, 43-18-22, "Visvesvaraya Bhavan", Venkatarajunagar, Railway Station Road, Visakhapatnam 530016 [☎: 0891-2947460; E-mail: visakhapatnamlc@ieindia.org]

#### All India Seminar on "Smart and Sustainable Marine Operations: Emerging Paradigm"

Ranchi, January 07-08, 2023

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO : Doranda, Ranchi 834002 [☎: 0651-2491344, Mobile: 9431382798, E-mail : jharkhandsc@ieindia.org, Website: ieijscjharkhand.org]

### Mechanical Engineering Division

#### All India Seminar on "Digital Image Processing and Image Correlation Techniques for Defect and Deformation Measurement"

Kattankulathur, October 24-25, 2022

The Honorary Secretary, IEI, Kattankulathur Local Centre, SRM Institute of Science and Technology, Mahatma Gandhi Road, Potheri, SRM Nagar, Dist Chengalpattu, Kattankulathur, Tamilnadu 603203, [☎: 044-2745 2270]

#### All India Seminar on 'Sustainable Development of Industries through Industry 4.0 Application'

Belagavi, October 28-29, 2022

The Honorary Secretary, IEI Belagavi Local Centre, Er S G Balekundry Marg, Shivabasava Nagar, Belagavi 590010 [☎: 0831-2470258, Mobile: 9141384358, E-mail : belagavilc@ieindia.org, Web: www.ieilcbelagavi.org]

#### All India Seminar on "Logistics and Supply Chain"

Bareilly, November 11-12, 2022

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

#### All India Workshop on "Solar Energy for Residential Application"

Kancheपुरam, November 10-11, 2022

The Honorary Secretary, IEI, Kancheपुरam Local Centre, Agni College of Technology – ACT,

Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: kancheपुरamlc@ieindia.org]

#### Thirty-seventh National Convention of Mechanical Engineers on "Advances in Battery Technologies for Electric and Hybrid Vehicles" Hyderabad, December 09-10, 2022

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, Website: www.ieitsc.org.in]

#### All India Seminar on 'Alternative Energy Systems' Bangalore, 16-17 November 2022

The Honorary Secretary, IEI, Karnataka State Centre, No.3, Dr B R Ambedkar Veedhi, Bangalore 560001, Ph: (080) 22264698 [Telefax: 080-22256191, E-mail: karnatakasc@ieindia.org, Web:www.ieiksc.org]

#### All India Seminar on "An Application and Performance Analysis of Refractories in the Thermal Power Plant"

Bokaro Steel City, December 17-18, 2022

The Honorary Secretary, IEI, Bokaro Steel City Local Centre, Abhiyanta Bhawan, Sector V-A, Bokaro Steel City 827006, [☎: 06542-267227, E-mail : bokarolc@ieindia.org, Web: www.bokarolc.org]

#### All India Workshop on "Smart Manufacturing and Automation using Advanced Robotics"

Kancheपुरam, 04-05 January, 2023

The Honorary Secretary, IEI, Kancheपुरam Local Centre, Agni College of Technology – ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [Email: kancheपुरamlc@ieindia.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]

### Metallurgical & Materials Engg. Division

#### Thirty-fifth National Convention of Metallurgical & Materials Engineers "Valuing Low-grade Ore and Waste: Challenges and Remedies"

Durgapur, January 21-22, 2023

The Honorary Secretary, IEI, Durgapur Local Centre, Nehru Avenue, B-Zone, Durgapur 713205 [☎: 0343-2564770, E-mail: durgapurlc@ieindia.org; Website: www.ieidurgapurlc.org]

### Mining Engineering Division

#### All India Seminar on "Sustainable Development of Mines - Role of Mining Technology"

Ranchi, November 19-20, 2022

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO : Doranda, Ranchi 834002 [☎: 0651-2491344, Mobile: 9431382798, E-mail : jharkhandsc@ieindia.org, Website: ieijscjharkhand.org]

#### Thirty-second National Convention of Mining Engineers on "Occupational Health Problem and Remedial Measures in Mining Operation"

Durgapur, 03-04 December, 2022

The Honorary Secretary, IEI, Durgapur Local Centre, Nehru Avenue, B-Zone, Durgapur 713205 [☎: 0343-2564770, E-mail: durgapurlc@ieindia.org; Website: www.ieidurgapurlc.org]

### Textile Engineering Division

#### All India Seminar on 'Sustainability in Apparel and Textile - 2022'

Coimbatore, November 25-26, 2022

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

#### Thirty-fifth National Convention of Textile Engineers on "Resource Efficient Technologies in Textile Manufacturing"

Kolkata, February 11-12, 2023

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

### Interdisciplinary Coordination Committee

#### All India Seminar on "Pipe Distribution Systems in Irrigation Project for Improving Water Use Efficiency"

Hyderabad, October 21-22, 2022

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, Website: www.ieitsc.org.in]

#### All India Seminar on "Emerging Trends in Engineering and Technology"

Pune, October 15-16, 2022

The Honorary Secretary, IEI, Pune Local Centre, 1332, Abhiyanta Bhawan, Shivajinagar, J M Road, Pune 411005, Ph : 020-25533376/25530250/25520239, E-mail : punelc@ieindia.org; Website : www.ieipune.org

#### All India Seminar on "Data Analytics: End-to-End AI Solutions and Augmented Analytics",

Ranchi, December 10-11, 2022

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, PO : Doranda, Ranchi 834002 [☎: 0651-2491344, Mobile: 9431382798, E-mail : jharkhandsc@ieindia.org, Website: ieijscjharkhand.org]

# IEI Engineering Education Excellence Award

The IEI Engineering Education Excellence Award has been instituted to recognize leading Engineering Educational Institutions and encourage for better and effective engineering education across the country. Significant development has taken place in the engineering education sector which has created benchmarks for the others to follow. The universities and institutions are no more confined to pedagogy but also diversified to R&D activities, Consultancy, Patents, Publication, Skill Development Programs, Industry interface and introduction of New Education Policy (NEP), thereby giving India the rightful place globally. Realizing that such institution can provide the leadership to a large number of others in the country, it has been considered appropriate by the IEI Council to institute the IEI Engineering Education Excellence Awards.

Applications in specified format (**visit link: <https://www.ieindia.org/webui/IEI-Activities.aspx#engineering-education-excellence-award>**) are invited from prospective applicants for IEI Engineering Education Excellence Award 2022. The last date of receipt of application for the Award 2022 is **31 October 2022**. Interested applicants are requested to send their applications (Two hard copies & One soft copy in Pendrive/CD) to the below mentioned address.

## Director [Technical]

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

## IEI AWARDS

### CALL FOR PAPERS

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

The topics for the year 2022 are given hereunder.

#### SAIL AWARD

**Countering Cyclic Downtrends in Steel Industry**

#### DR M VISVESVARAYA AWARD

**Contribution of Indian Steel Sector towards Net Zero Emission by 2070**

The articles preferably restricting to 3000 words along with good quality photographs may be submitted along with a Declaration Form to [award@ieindia.org](mailto:award@ieindia.org) within **October 15, 2022**. The template of the paper and the Declaration Form are enclosed, which are also available under the following link:

[https://www.ieindia.org/webui/IEI-Activities.aspx#Call\\_Papers](https://www.ieindia.org/webui/IEI-Activities.aspx#Call_Papers)

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

## Director (Technical)

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



## Project Management Associates Weekend Programme



### International Project Management Association

IPMA is a federation of about 72 Member Associations (MAs) who develop project management competences in their geographic areas of influence. Through IPMA, project management practitioners from all parts of the world can network, share ideas through effective collaboration and cooperation.

### Who / Why to Attend

Professionals across all levels who want to understand the intricacies of Project Management and want to excel in managing projects to advance their career.

### Discounted Program Registration Fee for IEI Members (15% discount from the published fee)

Participation Fee for Level C: Rs. 47,090 per person plus GST @ 18%

Participation Fee for Level D: Rs. 24,650/- per person plus GST @ 18%

- Registration fee is non refundable. However, alternate persons can be nominated.
- 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 **October 7<sup>th</sup>, 8<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup> 2022**. The relevant material is available in the link <https://www.pma-india.org/brochures>.

**Exam Dates for Level C:** 22<sup>nd</sup>, 28<sup>th</sup>, 29<sup>th</sup> October 2022

**Exam Dates for Level D:** 22<sup>nd</sup> October 2022

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

### For more details, please contact:

Arvind Agarwal, Head, PMA Cert (Certification Body)

Project Management Associates

FC-33, Plot No. 1 & 2, Periyar Centre, 3rd Floor, Institutional Area, Jasola, New Delhi – 110025

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) /

## IEI Industry Excellence Award 2022 Request for Participation

The IEI Industry Excellence Award has been instituted to recognize industry leaders for their innovation, excellence in engineering operations and thereby, to lead their industry in competitive manner. The benchmarks created by the industries in India have included productivity, quality, safety and performance assurance thereby giving India the rightful place in the global markets. Realizing that such industries can provide the leadership to a large number of other industries in the country, it has been considered appropriate by the IEI Council to institute the IEI Industry Excellence Awards in the year 2008.

Applications in specified format (visit link: <https://www.ieindia.org/webui/IEI-Activities.aspx#industry-excellence-award>) are invited from prospective applicants for IEI Industry Excellence Award 2022. The last date of receipt of application for the Award 2022 is **31 October 2022**. Interested applicants are requested to send their applications (Two hard copies & One soft copy in Pendrive/CD) to the below mentioned address.

### Director [Technical]

The Institution of Engineers (India)  
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