



# I.E.I NEWS

December 2021

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A CENTURY OF SERVICE TO THE NATION

Volume 28

Number 9

## Thirty-sixth National Convention of Civil Engineers and National Conference

### Innovation, Mechanization and Modern Techniques in Civil Engineering

**Jharkhand State Centre** of the Institution organized 36<sup>th</sup> National Convention of Civil Engineers and National Conference on the theme **Innovation, Mechanization and Modern Techniques in Civil Engineering** under the aegis of Civil Engineering Division Board (CVDB), IEI in virtual mode during 23-24 October, 2021, in association with Birla Institute of Technology, Mesra, Ranchi. Shri Nitin Gadkari, Hon'ble Minister, Road Transport and Highways, Government of India graced the inaugural function Chief Guest. In his address, Shri Gadkari stated that technology is perhaps the greatest changing agent



Shri Nitin Gadkari

in today's world and is evolving at an ever accelerating pace. Development of innovative technologies will reduce costs, save natural resources, protect environment and help improve quality of life and in this regard, the role of engineering becomes crucial. He highlighted that in post-independence era, rapid progress in the development of the country has taken place through the application of engineering sectors: roads and highways, dams and irrigation systems, different civil constructions including building of smart cities; sanitation systems, etc; With the launching of the PM Gati-

Shakti National Master Plan, the Government has showcased its commitment towards holistic and integrated infrastructures and logistic ecosystem in the country, ensuring ease of doing business. Further, he said it would gain importance due to the significant demand raised because of targeted higher growth of development so as to achieve our goal to become a seven trillion economy by 2030. He emphasized that the focus of technological advancement should be on cost-effective, qualitative and sustainable infra development in the county. Er Narendra Singh, President, IEI expressed his satisfaction for selecting a very appropriate theme for the said National Convention. During his brief speech, he said implementing construction work for buildings is a complicated and labour intensive task and it also requires the use of various types of machines and equipment. Er Singh opined that technologies for building construction are still being developed and implemented to improve work efficiency and quality. Dr Hemant O Thakare, President-elect, IEI



Er Narendra Singh

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## Thirty-fifth National Convention of Production Engineers and National Conference

### Emerging Technologies for Sustainable Manufacturing

**Durgapur Local Centre** of the Institution organized the 35<sup>th</sup> National Convention of Production Engineers under the aegis of Production Engineering Division Board (PRDB) through hybrid mode during October 30-31, 2021. A National Conference on the theme **Emerging Technologies for Sustainable Manufacturing** was also organized along with the National Convention. Prof Saikat Maitra, Vice Chancellor, Maulana Abul Kalam Azad University of Technology (MAKAUT), West Bengal graced the inaugural function as Chief Guest. Prof Maitra, in his address discussed at a length the global paradigm shift in manufacturing, characterized by



Prof Saikat Maitra

introduction of smart and intelligent machines, enhanced applications of digital technologies, robotics, IoT, Artificial Intelligence etc and mentioned these as the major facets of industrial development. Prof Maitra strongly advocated for the collaborative functioning by industry, academia, R&D to develop advanced tools, techniques and methodologies to support the industry 4.0 related manufacturing system and felt that knowledge-based industries and startups have taken the centre stage. He opined that the economic development and growth of the country is shifted towards

service rendering ability, which leads to capacity building and self-reliance in production systems. He felt that organizing such technical events will enhance the technological awareness to develop the upgraded skills and abilities to support and develop sustainable manufacturing technologies for the future. In his address, Prof Maitra discussed on different advents of Industry 5.0, where personalization of customers is the major feature and there are phenomenal opportunities to apply the knowledge in the field of production engineering that integrates different digital technologies in a seamless manner.

Er Narendra Singh, President, IEI in his address focused on new technological developments on sustainable, environment friendly and cost-effective manufacturing processes, which enables the practicing professionals, researchers and students to be aware of advanced technologies for process industries.

Dr Deb Kumar Tripathy, Chairman, PRDB, IEI in his address stated that digital transformation has significant impact on almost all areas of manufacturing with rapid propagation on Industrial Automation, Robotics, Internet of Things etc, which lead to higher productivity and efficiency.

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# Innovation, Mechanization and Modern Techniques in Civil Engineering

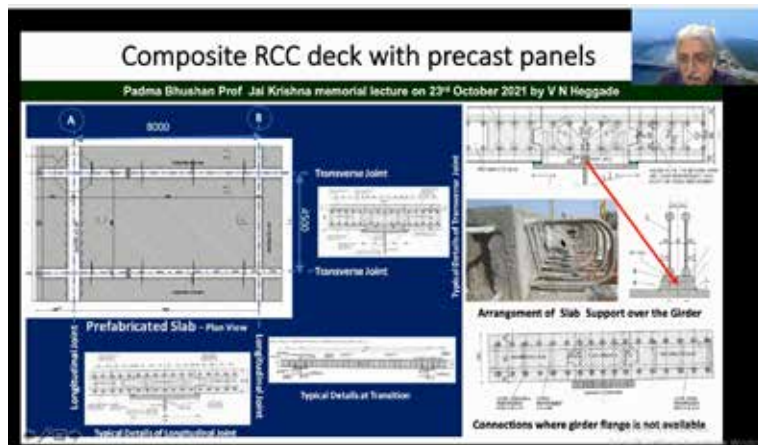
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in his address mentioned that the impact of the construction industry is known to have significant effect on the economy and prosperity of the country. He affirmed that the sector is progressing at a very fast pace and bringing prosperity to the nation and the people. Dr Thakare added that the last decade has witnessed significant shifts in Civil Engineering practices,



especially innovations, mechanisation and incorporation of new techniques have contributed significantly which resulted in making the construction industry capable of overcoming the tag of labour-intensive industry.

Er V B Singh, Chairman, Civil Engineering Division Board, IEI congratulated



Jharkhand State Centre for selecting the theme, which is contemporary to the modern times, particularly when the construction industry is suffering from dearth of skilled manpower. He mentioned that there has been a long standing requirement for introducing devices that lessen and/or replace manual intervention on machine construction, automation and even robots as proposed by designers and technologists. Er V B Singh further opined that technologies for building construction are still being developed and implemented to improve work efficiency and quality in

The following Papers were presented during the technical sessions:

A Review on Seismic Response of Concrete Arch Dam

Thermal/Fire Resistance Studies on Cermabond-569 and Ldam Coated Concrete Structures at Elevated Temperature

Analytical Study on the Behaviour of Concrete in-filled FRP Tubular Columns Subjected to Lateral Cyclic Loading

innovative architectural and construction solutions. He also talked about scope for improving work in the construction site introducing automation and computerisation of labour intensive processes.

At the onset, Er Siyaranjan Kumar Singh, Chairman, IEI Jharkhand State Centre welcomed delegates, participants and audience. During his welcome speech he said India has been experiencing major transformation in both physical and economic terms in order to meet the growing needs of built space/infrastructure for the rapidly increasing population, industrialisation and urbanisation. Mr Singh said that large scale constructions have been taking place in the country which has led to the emergence of the construction sector as the second largest industry in the country that makes significant contributions to the national economy and generates huge employment. All these have put increased pressure on the Civil engineers / Construction Industry forcing them to think of mechanization and generating innovative ideas to meet the demand, added Mr Singh. Er A K Saxena, Chairman, Board of Governors, Sustainable Development Forum, IEI while giving the overview on the theme, spoke on the transition of the construction sector from ancient to modern era with some relevant examples of civil engineering marvel and set the tone of the event.

On this occasion, Er Shivanand Roy, Former Engineer in Chief, Water Resources Department, Government of Jharkhand; Er Sharad Jaipuria, Former Head of Civil Engineering & Architecture Section, MECON Limited, Ranchi; Dr Y P Gupta, Former Professor, Motilal Nehru National Institute of Technology, Allahabad and Chairman, Yash Krishi Tacknique Evam Vigyan Kendra, Allahabad and Er Jnan Ranjan Pal, Chief Engineer, Central Design Directorate Irrigation Department, Government of Uttar Pradesh, Lucknow, were felicitated as Eminent Engineering Personalities for their contribution in Civil Engineering discipline. Padma Bhushan Prof Jai Krishna Memorial Lecture was delivered by Er V N Heggade, Former CEO, STUP Consultant Private Limited on the topic 'Design & Construction of Signage Bridge of its kind in Delhi'. In his address, Er Heggade covered various considerations made in design and construction of Signage Bridge over River Yamuna in Delhi which is a landmark project.

A Souvenir was released on the occasion by the Chief Guest and other dignitaries present during the inaugural session. Finally the vote of thanks was proposed by Er Jitendra Kumar, Honorary Secretary, Jharkhand State Centre.

Good numbers of papers were submitted embracing the theme of the National Conference which were reviewed by the Technical Committee headed by Dr Sekhar Chandra Dutta, Professor, IIT - ISM, Dhanbad. Three technical sessions were organised where many of the accepted papers were presented. These sessions were chaired and co-chaired by Er Aamir Ali Mir, Er Dinesh Kumar, Er Chinmay Debnath, Prof R K Prasad, Er S P Datta, the Council Members attached to the Civil Engineering Division Board of IEI.

Rinku John and Deepa Balakrishnan S, Department of Civil Engineering, School of Engineering, Cochin University of Science and Technology, Cochin, Kerala

Bishwajeet Chaubey, Chief Construction Engineer (R&D), DRDO South, Hyderabad, Telangana

Sekhar Chandra Dutta, Professor, Department of Civil Engineering, Indian Institute of Technology (ISM) Dhanbad, Jharkhand

Varunkumar V, Gajalakshmi P and Revathy J , Department of Civil Engineering, B S Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu

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Risk Assessment of Earthquake on Historical Structures and Monuments

P K Tiwari, Assistant Superintending Engineer, Archaeological Survey of India, Sarnath Circle, Varanasi

G Pandey, Prof & Dean, Infrastructure & Planning, Madan Mohan Malaviya University of Technology, Gorakhpur

V Kumar, Assistant Professor, Civil Engineering Department, Central University of Haryana

3D Concrete Printing: A Road Map for future of Automated Construction in India

Raman Shaw, Kundan K Maurya and Damodar Maity, Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal

Application of Fly Ash Cenosphere in Cement Composites: A Comprehensive Review

S K Patel, and A N Nayak, Department of Civil Engineering, VSS University of Technology, Burla, Odisha

C R Mohanty

Department of Civil Engineering, Parala Maharaja Engineering College, Berhampur, Odisha

Durability Properties of Pervious Concrete using Nanosilica

D Tarangini, P Sravana and P Srinivasa Rao

Department of Civil Engineering, Jawaharlal Nehru Technical University, Kukatpally, Hyderabad, Telangana

Ecosystem Restoration – A Holistic Approach

S Gnanasekaran

Former Deputy General Manager (Civil), M/s ONGC Ltd, Kuttalam

S Sankaran and A Deivigaan, Assistant Professor, Civil Engineering Department, University College of Engineering, Thirukkuvalai, Nagapattinam, Tamil Nadu

Benefits of Glulam Timber Roof Structure for Airport Passenger Terminal Buildings

Ravi Lakshmanan, GMR Infrastructure (Singapore) Pte. Ltd, Bonifacio Global City, Taguig City, Philippines

Feasibility of Plastic Waste as Reinforcement in the Mechanical Properties of Stabilized Lateritic Soil Blocks

M G Sreekumar and Dr Deepa G Nair, Department of Civil Engineering, School of Engineering, Cochin University of Science and Technology, Kochi, Kerala

Development and Validation of a Delay Assessment Matrix for Road and Highway Projects

Harish L Reddy

Assistant Professor, National Institute of Construction Management and Research, Pune

M S Nagakumar

Professor, R V College of Engineering, Bengaluru

Adoption of Modern Technology in Irrigation Projects – A Case Study of Ongoing Polavaram Project in Andhra Pradesh

I Satyanarayana Raju, Former Chief Engineer, Irrigation Department, Govt. of Andhra Pradesh and Former Chairman, Andhra Pradesh & Telangana State Centres, IEI and Former Council Member, IEI

Design and Development of Underwater ROV for Dam Inspection

Muniyandy Elangovan, B Yuvan Siddarth, R Govindram Uduupa and M Mohan Babu, Department of Mechanical Engineering, VelTech Rangarajan Dr Sagunthala R&D Institute of Science and Technology, Tamil Nadu

Studying Aggressive Clearing Behavior of Drivers at Uncontrolled Intersections under Mixed Traffic Conditions

Manish Dutta, Assistant Professor, Department of Civil Engineering, Institute of Technology, Nirma University, Ahmedabad, Gujarat

Kamalnath Maddu, PhD Student, Department of Civil Engineering, National Institute of Technology Silchar, Assam

Suprava Jena, Assistant Professor, Department of Civil Engineering, National Institute of Technology Silchar, Assam

Modelling and Exploring the Impacts of E-Grocery Shopping on Trip Generation in India

Suprava Jena, Assistant Professor Department of Civil Engineering, National Institute of Technology Silchar, Assam

Momi Deb

PhD Scholar, Department of Civil Engineering, National Institute of Technology Silchar, Assam

Manish Dutta

Assistant Professor, Department of Civil Engineering, Institute of Technology, Nirma University, Ahmedabad, Gujarat

Statistical Modelling for Rainfall Time Series Analysis: Khurdha District of Odisha, India

Ankita Bohidar,

Research Scholar, Civil Engineering Department, VSSUT, Burla, Sambalpur, Odisha

Anil Kumar Kar

Associate Professor, Civil Engineering Department, VSSUT, Burla, Sambalpur, Odisha

Prof Pradeep Kumar Das

Registrar, National Institute of Technology Rourkela, Odisha

During Valedictory Function, Er Chandrakant Raipat, Former Chairman, Jharkhand State Centre, IEI and Er N Shiv Kumar, Committee Member, Jharkhand State Centre graced the occasion as Chairman and Co-chairman respectively. Er Raipat and Er Shiv Kumar jointly summarized the Memorial Lecture sessions and the technical sessions to give a precise overview of

the event organized during two days. Er Siyaranjan Kumar Singh, Chairman, Jharkhand State Centre, IEI delivered the concluding remarks and proposed the vote of thanks at the end of the event. A large number of participants attended the online event.

# Emerging Technologies for Sustainable Manufacturing

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While delivering the welcome address, Prof (Dr) Kartik Chandra Ghanta, Chairman, Durgapur Local Centre & Council Member, IEI, explained the objective of the National Convention. Prof Ghanta opined that sustainable manufacturing basically concentrates on cut throat technologies in multidimensional front, optimization of resources and invention of new technologies in the context of environmental preservation and restoration for sustainable development. Mr Safikum Islam, Organizing Secretary of the event briefed the audience about the theme of the National Convention. A Souvenir was also released on the occasion. Mr M K Biswal, Honorary Secretary, Durgapur Local Centre, IEI proposed the vote of thanks.



**Mr Rashmi Ranjan Mohapatra**

Eminent Engineering Personalities for their immense contribution in the field of Production Engineering.

On this occasion, Mr Rashmi Ranjan Mohapatra, President, Titanium Equipment and Anode Manufacturing Company Limited (TEAM), Engineering, Membrane and Water Divisions, Chennai; Dr Nagahanumaiah, Director, Central Manufacturing Technology Institute (CMTI), Bangalore; and Prof (Dr) Harish Hirani, Director, CSIR-Central Mechanical Engineering Research Institute, Durgapur, West Bengal were felicitated as



**Prof Siba Sankar Mahapatra**

The F W Taylor Memorial Lecture was delivered by Prof Siba Sankar Mahapatra, Professor HAG, Department of Mechanical Engineering, National Institute of Technology Rourkela on the topic 'A Study on Flexible Flow Shop using Meta Heuristic Approaches'. In his address, Dr Mahapatra discussed on the significance to optimize and standardize the production systems and processes in the context of changing priorities, orientation and dimensions of product output and mentioned that different mathematical models have developed to improve the system effectiveness. He explained applications of job scheduling, which is basically concerned with the allocation of operations on machines to minimize make span, flow time and tardiness. He explained applications of feasible scheduling, static and dynamic scheduling, resource constrained project scheduling, job shop scheduling, flow shop scheduling etc with different processing routes and sequence of operations. Prof Mahapatra further discussed the application of Particle Swarm Optimization to solve shop scheduling problems.

The G C Sen Memorial Lecture was delivered by Dr Janakarajan Ramkumar, Professor, Mechanical Engineering Department, Indian Institute of Technology Kanpur. Prof Ramkumar explained sustainability as the concept of needs and the idea of limitations, imposed by the state of technology and social organization, on the environment's ability to meet the present and future needs. In his lecture, Prof Ramkumar deliberated at a length the applications, operational & strategic implementations, dimensions

& principles of Lean & Green Business Models. He deliberated on Additive Manufacturing and Subtractive Manufacturing for sustainability and explained applications of JIT, Jidoka, Cobots in sustainable manufacturing. He further explained different stages in Lean Production, Lean improvement, Green Thinking and the significance & benefit of creating green and sustainable manufacturing. Prof Ramkumar concluded his lecture with the emphasis to optimize our current resources, strive for lean and green technologies, elimination of waste, reduction of pollution and more stress on Reduce, Recycle and Reuse (RRR).

Prof (Dr) Harish Hirani, Director, Central Mechanical Engineering Research Institute, Durgapur delivered State of Art Lecture on the topic



**Prof (Dr) Harish Hirani**

'Sustainable Manufacturing'. He discussed the role of manufacturing in national employment and GDP and opined that combination of supply chain, policy initiatives and efforts from private sectors with appropriate research & development may let the country to be a renowned manufacturing hub.


Mr Rashmi Ranjan Mohapatra, President, Titanium Equipment and Anode Manufacturing Company Limited (TEAM), Engineering, Membrane and Water Divisions, Chennai delivered State of Art Lecture on the theme of the National Conference. In his lecture, Mr Mohapatra discussed on various challenges in manufacturing industry, industrial index of production, contribution of manufacturing to GDP and employment. He further discussed on the challenges and constraints in implementing Industry 4.0, which include adaptation to the technologies, skilled manpower, cost and ecosystem etc.



**Dr Nagahanumaiah**

Dr Nagahanumaiah, Director, Central Manufacturing Technology Institute (CMTI), Bangalore delivered State of Art Lecture on the topic 'Optimizing Factory Productivity by Addressing 4P Challenges, Product-Process-People-Production'. In his lecture, Dr Nagahanumaiah stated that survival of the organizations is driven by innovation and explained the roadmaps to address the 4Ps in terms of Research-Technology-Training-Applications.

**Ring flare fuel spray (for Aero engine- Import substitute)**





**Processes:**

- CNC Turning, Grinding, Micro-drilling,
- Wire EDM with rotary attachment

**Challenges:**

- Machining of 80 % Nickel alloy
- 0.625 mm full radius radial grooving




Rotary attachment for WEDM

He explained different machining operations with mechanical force, i.e. cutting, grinding; material removal through melting and vaporization by EDM, LBM, EDM; Ablation with decomposition of atom, using incident photon energy and chemical or electrochemical reaction based ionic dissolution. He deliberated at a length precision machining, different industry ready technologies, Smart Factory Layout, Abrasive Flow Nano finishing, Micro Additive Manufacturing, Smart Manufacturing, Smart Foundry, implementation of IIoT in Metal Casting and so on.



**Prof Suman Chakraborty**

A Panel Discussion was organized on the topic 'Future of Production Engineering', which focused on generating employability of the engineers through skill development and restructuring engineering course curriculum.

Three Technical Sessions were organized on the subtheme 'Advancements & Sustainable Manufacturing', 'Emerging & Allied Technologies for Industrial Development' and 'Internet & Information Technology for Modern Industry',

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## FEA and FMEA in Mechanical Design

Kancheपुरam Local Centre of the Institution organized All India Seminar on the theme **FEA and FMEA in Mechanical Design** during October 12-13, 2021 under the aegis of Mechanical Engineering Division Board (MCDB), IEI. The Failure Effect Analysis & Failure Mode Effect Analysis helps identify potential failure modes based on experience with similar products and processes. It is widely used in product design, development and manufacturing through various phases of the product life cycle. Effects analysis refers to studying the consequences of those failures on different system levels. Functional analyses are needed as an input to determine correct failure modes, at all system levels, both for functional FMEA or Piece-Part (hardware) FMEA. An FMEA is used to structure Mitigation for Risk reduction based on either failure mode effect severity reduction or on lowering the probability of failure or both. Principally, FMEA is a fully inductive or forward logic analysis, however the failure probability can only be estimated or reduced by understanding the failure mechanism. Hence, FMEA may include information on causes of failure (deductive analysis) to reduce the possibility of occurrence.

Chief Guest on the occasion, Mr R Sundar, Scientist D, National Institute of Ocean Technology, Chennai, deliberated his presentation on the topic 'Various FEA Applications in Ocean Technology'. In his address, Mr Sundar provided the insight about the role of engineers and importance of materials in automobile industries. Prof (Dr) D Elango, Member, Board of Studies, Department of Civil Engineering, Anna University, Chennai graced the function as Guest of Honour. Numbers of Papers were presented during the technical session. Dr D Eiliraja, Associate Professor, Department of Mechanical Engineering, St Joseph's Institute of Technology, OMR, Chennai deliberated his presentation on the topics 'Applications of Finite Element Methods', 'Modern Methods of Applications of Finite Element Methods' and 'Advanced Technologies in FEA'. During his deliberation, he discussed on impact tower for protective headgear as per ASTM F1446, energy absorption



test of a vehicle roll over protective structure, structural analysis subject to gyroscopic dynamic effects etc. Mr M Sugumaran, Head, Curriculum & Product Development, CADD Centre Corporate Office Chennai deliberated on FEA and FMEA for Modern Engineering and Development and explained the applications of FEA and FMEA as the simulation of physical phenomenon using numerical methods and simulation application software. Dr M S Alphin, Associate Professor, Department of Mechanical Engineering, SSN College of Engineering, Chennai delivered presentation on mathematical formulation of FEA and FMEA. In his address, Dr Alphin discussed on the numerical methods, which are applied in many fields of engineering and research and allows efficient and precise modeling of mechanical, thermal or other complex systems. Dr M Selvaraj, Associate Professor, Department of Mechanical Engineering, SSN College of Engineering, Chennai deliberated lecture on the topic 'Thermal Simulation of FSW for Predicting Defect Free Weld using ANSYS' and Various Deft Analysis using ANSYS'. Earlier, Prof (Dr) D Ilango, Chairman, Kancheपुरam Local Centre, IEI delivered the welcome address.

## Emerging Technologies for Sustainable Manufacturing

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**Integral balance (Aerospace application-Import substitute)**

To measure and analyze the forces and moments acting in all three axes (x, y, z) on aircraft test models in a wind tunnel testing facility (M/s. NAL)

**Processes:**

- CNC turning, CNC milling, Grinding, Wire EDM, & EDM

B119 model

B118 model

**Challenges:**

- Dimensional & Geometrical accuracies 5-10µm
- Need accurate Fixture design & fabrication
- Electrode fabrication for inaccessible and critical areas
- One off components with multi features needs utmost care

**Smart Machines & Aggregates**

Intelligent Ultra Precision Turning Machine

Ultra Stiff Ultra Precision Diamond Turning Machine

Projection Microstereo lithography

Scanning Tunneling Microscope

Ultra Precision Machine Tool Sub-Systems

Nano Finishing

Manufacturing & Fabrication Solutions

Hydrostatic Slide

Aerostatic Spindle

Abrasive Flow Finishing Machine

Micro Mold & Needle

Micro machining & spiral grooving of special alloy

Spindle Error Analyzer

Surface Engineering

DLC coated germanium lens, cutting tools and surgical blades

when 22 papers were presented. The sessions were chaired by Prof (Dr) Asit Baran Puri, Department of Mechanical Engineering, NIT Durgapur; Dr Chittotosh Bhattacharya, Deputy Director, NPTI, Eastern Region and Prof Amar Nath Mullick, Department of Mechanical Engineering, NIT Durgapur.

During the Valedictory function, Prof Suman Chakraborty, Dean, Sponsored Research and Industrial Consultancy, IIT Kharagpur graced the occasion as Chief Guest. In his lecture, Prof Chakraborty mentioned Additive Manufacturing and 3D Printing as different paradigm in the field of manufacturing. He deliberated on the applications of 3D Printing for

manufacturing healthcare products and emphasized on the scalability of manufacturing of medical products with mass replication and required precision. He further opined that the major shift in supply chain with start ups and innovation results a disruptive pattern in production engineering system, which leads to self reliance. Prof Chakraborty strongly advocated for organizing meaningful resources to initiate verticals for this emerging paradigm of manufacturing towards the realization of make in India initiative in its' truest sense.

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## The Future of Construction and COVID Impact

The Civil Engineering Division Board (CVDB) of the Institution organized IEI Technical Webinar on the theme **The Future of Construction and COVID Impact** on 5 September, 2021. Mr Suhas Sahebrao Jadhav, Director Product Development, Hexagon AB, Dubai, UAE and President AACE UAE Section; and Mr V Suresh, Former Chairman & Managing Director, Housing & Urban Development Cooperation (HUDCO), Chairman, IGBC shared their thoughts and views with the audience as Panelists. Mr Manoj Kumar Panigrahy, Senior Project Controls Specialist, ADNOC Offshore-PMC, Abu Dhabi moderated the session and introduced the Panelists. Mr V B Singh, Chairman, Civil Engineering Division Board, IEI in his welcome address stated that construction field is an unorganized sector and mostly human - driven and as a result, during the pandemic times, most of the construction sites were shut down due to the risk of infection. Mr Singh opined that the COVID-19 outbreak results change in company policies, work culture and increase in use of automation in construction sector. He explained three types of risks associated with construction projects with practical examples, namely completion risk, commercial risk, and contractual risk, which cause project delays and financial loss. To mitigate such negative impacts, during this pandemic situation, all the employers and construction companies should implement the control measures to minimize the spread of COVID-19 and provide a safe work environment for the workers, he opined.

Mr Suhas Sahebrao Jadhav, in his lecture, talked about worldwide GDP shrink during the pandemic and explained the impact of COVID 19 on the construction industry, which accounts for the second major contribution to the GDP and economic growth. Mr Jadhav, in his lecture stated that supply chain management, manpower crisis, problems in transportation, finance, contractual implications, unemployment and protection of onsite employees are some of the perturbing issues in construction industry, which create hindrances for transit to the new normal.

To address these issues, Mr Jadhav advocated for adoption of digitization in construction sector. While analysing the acceptability of digitization in construction sector, he informed that majority of the companies will prefer for revisiting the supply chain by choosing local options to avoid supply chain bottlenecks and use the conventional mode of working whereas a significant portion agree that the crisis will change the way the companies function. It is found that some of the companies tried remote working for the first time, said Mr Jadhav, He further insisted on upskilling the employees in the sector and building a centralized control tower across the entire portfolio



Mr Suhas Sahebrao Jadhav

of the companies. He also spoke on supply chain resilience, identifying opportunities for shift work-off, redeploying capita and resources and getting closer to the customers since market dynamics has changed during this pandemic situation.

Mr V Suresh commenced his talk with a brief overview on world population trend, urbanization scenario in India and implication of growth of cities on GDP and national economy. While explaining the importance of construction sector as growth booster of national economy, Mr Suresh touched upon various ambitious projects of Government of India especially smart cities, city infrastructure resurgence and special economic zones. Construction sector is the second largest employment sector after Agriculture and contributes to 12% to GDP, added by Mr Suresh. He briefly

described Vernacular systems, Conventional systems, industrialized systems and Alternative systems as various Construction Systems used in India and presented a comparative analysis based on various parameters like people associated, raw material used, site of construction, cost effectiveness and sustainable technique. He told that the main aim is to reduce the cost of construction without sacrificing any element of safety or serviceability of the process. Mr Suresh spoke about next generation sustainable construction techniques which involve PMI and BIM applications which help to achieve sustainable, resilient and energy efficient designs on building projects. He elaborated on low-emitting materials, AFM & housekeeping and other hygiene protocols. Mr V Suresh also apprised about the NET ZERO Movement led by Indian Green Building Council (IGBC) and the guidelines issued by IGBC for combating COVID 19 in construction field. He opines that Indian construction sector would undergo a paradigm shift by embracing green building concepts and facilitate tremendous benefits to the nation. Mr Suresh concluded his speech with the hope that Green Buildings & Green Built Environment will provide excellent opportunities towards resource optimization and to achieve long term UN-SDG Goals by the year 2030 & decarbonization Goal by the year 2050.



Mr V Suresh

Moderator of the Session, Mr Manoj Kumar Panigrahy coordinated the Q&A session which was very interactive one. The webinar was concluded with the vote of thanks proposed by Dr Nilanjan

Sengupta, Director (Technical), IEI.



Mr Manoj Kumar Panigrahy

## Emerging Technologies for Sustainable Manufacturing

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Recommendations emanated from the two-day deliberations are furnished as follows.

For product design and development, students from engineering institutions should be inducted in R&D under the guidance of the professionals and thus the Lab-to-Component mode should be facilitated.

Production Lead Time should be minimized for rapid product development with process optimization and Skill Development Programmes may be organized on the emerging topics.

More applications of Smart, Green, Lean and Additive Manufacturing are the need of the hour with the objective to minimize waste and the engineering curriculum and syllabi need to be modified.

Innovations and quality awareness need to be embedded with the emerging production engineering practice.

Industry and academia must work together with MSME and other stake holders with the objective to develop a new ecosystem of Production Engineering, which is distinctive from the traditional one.

# Optical Fiber Communication

West Bengal State Centre, IEI organized Technical Webinar on the theme **Optical Fiber Communication** on 26 November, 2021 under the aegis of Electronics and Telecommunication Engineering Division Board [ETDB]. Mr Abhijit Ghosh, State Training Lead, Reliance Jio Infocomm Limited, West Bengal and Mr Debmoy Bhattacharya, Divisional Manager, BSNL deliberated lecture during the event as Panelists. The session was moderated by Mr Ram Chandra Chakraborty, Managing Director, PSI Metals India Private Limited. Mr Sandip Kumar Deb, Chairman, West Bengal State Centre & Council Member, IEI delivered the introductory remarks. Mr Chanchal Chakraborty, Joint Convener, Electronics & Telecommunication Engineering Divisional Sub-committee, West Bengal State Centre introduced the Panelists.



Mr Abhijit Ghosh

Mr Abhijit Ghosh started his presentation on 'Optical Fiber Basics'. He discussed the importance of Fiber Optics, which include wide bandwidth, low attenuations, electromagnetic immunity, small size, light weight, safety, security & reliability, ease of installation & maintenance upgradability and very good price to performance ratio. He then narrated basic principles of optical fiber communication, applications of optical fiber, different modes and

certifying the performance of new fiber optics links and detecting problems with existing fiber links, Laser Source Power Meter (LSPM) for measuring optical loss on fiber link.



Mr Debmoy Bhattacharya

Mr Debmoy Bhattacharya deliberated on the topic 'Optical Transport Network'. He started his deliberation with focusing on the growing demand for bandwidth for transportation of end user data consumption. He stated that the Telecom Transport Technology started the journey with Plesichronous Digital Hierarchy (PDH) and to cope up with subsequent demand for more bandwidth requirement, Synchronous Digital Hierarchy (SDH) evolved. Further, Wavelength Division Multiplexing (WDM) paved the way for using Optical Fibre in more efficient and precise

### Types of Cable – Loose Tube Type

❖ 48F (LT):

- ❖ 6 Loose Tubes with 8 fibres each in the above sequence
- ❖ ECCS (Electrolytically Chrome-Coated Steel) Armouring with thickness > 0.14mm
- ❖ Orange (for NLD) / Green (for Intracity) HDPE Sheath with thickness > 1.5 mm
- ❖ Central Strength Member FRP Diameter 2.3 mm
- ❖ Drum Length : 4Km ± 5% (for NLD) & 2Km ± 5% (for Intracity)

### Ferrule Types

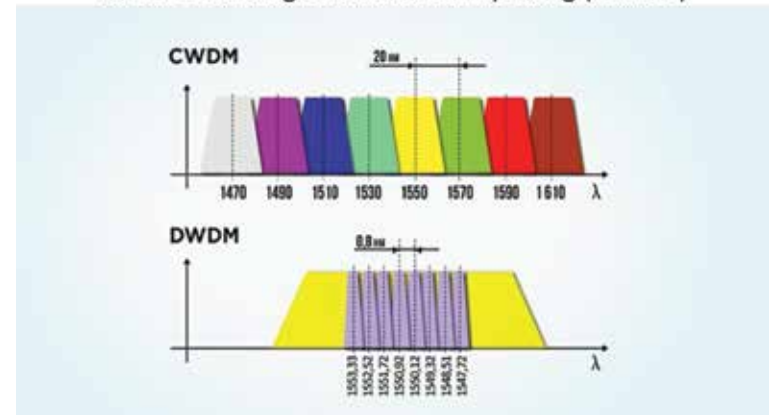
Ferrule – The extended tip of a connector, which makes contact with the receptacle in the jack.

Return Loss/ Back Reflection

specifications of fiber. He discussed different type of optical fiber cables like loose tube, Ribbon, All Dielectric Self Supporting, (ADSS), Ariel Optical Fiber cable and their applications in the field. He then explained different types of Small Form-factor Pluggable (SFP), optical connectors used in Optical Fiber Network. He briefly touched upon dimensional and transmission characteristics of fiber, different techniques for laying optical fiber like Open Trenching, Manual Boring, Horizontal Directional Drilling (HDD), Micro Trenching and Ariel Cabling. He then moved on to explain applications of Splicing Machine for joining two end-to-end optical fibers, Connector Inspection Microscope for ensuring proper inspection and cleaning processes, optical time - domain reflectometer (OTDR) for

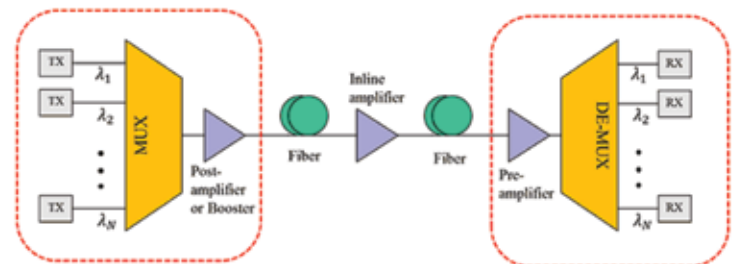
## OPTICAL TRANSPORT NETWORK

WDM: Coarse Wavelength Division Multiplexing ( CWDM) and Dense wave length Division Multiplexing (DWDM)



## OPTICAL TRANSPORT NETWORK

WDM :DWDM Line Amplifier (ILA)



manner; Multiprotocol Label Switching- Transport Profile (MPLS-TP) solved the problem of clock synchronization and network clogging, he stated and further added that Optical Transport Network (OTN) is so far the latest platform to support variety of end user requirement in terms of bandwidth or interface.

He narrated that during nineties, PDH and later SDH bandwidth transmission technology helped a lot in developing mobile and office networking for automation. He also explained that PDH became costly technology for point to point working, multiple network elements and application of high quality clock; Also PDH has limitation of bandwidth transportation capacity

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## Basic Energy Economy of Power Plant and Electrical Tariff Structure

**South Gujarat Local Centre** of the Institution organised a Technical Webinar on the theme **Basic Energy Economy of Power Plant and Electrical Tariff Structure** under the aegis of Mechanical Engineering Division Board [MCDB] on 16 November, 2021. Mr Dinanath Akela, Competent Person for Boiler Inspection and Certification, Central Boiler Board, New Delhi, BEE Certified Energy Manager & NDT Level II in RT & UT deliberated a lecture on the occasion as Panellist. Dr Jignesh G Vaghasia, I/c Principal, Professor & Head, Mechanical Engineering Department, Shree Swami Atmanand Saraswati Institute of Technology, Surat was the Moderator of the session.

Mr Dipak Gomanbhai Patel, Honorary Secretary, South Gujarat Local Centre, IEI delivered the welcome address. Mr Jagroop Singh, Chairman, MCDB, IEI in his address stated that, electricity demand in the country has increased rapidly and is expected to rise further in the years to come. In order to meet the increasing demand for electricity in the country, massive addition to the installed generating capacity is required, he added. He further mentioned that India is the world's third-largest energy consuming country, and has seen extraordinary success in its energy development. In recent years, India has brought electricity connections to hundreds of millions of its citizens; promoted the adoption of highly-efficient LED lighting by most households; and prompted a massive expansion in renewable sources of energy, led by solar power, he briefed further.

Prof (Dr) Swapan Bhaumik, Chairman, Committee for Advancement of Technology and Engineering (CATE), IEI in his address stated that energy is acknowledged as the key input towards raising the standard of living of citizens of any country, as is evident from the correlation between per capita electricity consumption and Human Development Index (HDI); Accordingly, energy policies of India have over the years directly aimed to raise per capita energy and electricity consumption. Moreover, the world is moving away from overwhelming dependence on fossil fuel and the decline in the cost of wind and solar technologies in the recent years led to change in the focus on nonconventional energy sources, he opined.

Mr Dinanath Akela started his presentation with an overview on the Indian power sector scenario. He briefed about the electricity demand forecast, power consumption pattern, energy intensity and energy consumption per

capita. He deliberated at length on Peak Load, low power demand, Peak demand and explained the legal provision of tariff. He mentioned that electricity tariff is determined based on the provisions, as mentioned in Electricity Act 2003 and Tariff Policy Notification by Government of India. He further explained the roles and responsibilities of Central Electricity Regulatory Commission (CERC) and Power Purchase Agreement (PPA). He further discussed different Electricity Tariff, demand and consumption patterns, enhanced cost of coal and its effect on power and tariff structure. He explained

Electricity Tariff in two parts, namely capacity drawn in KVAh and actual power drawn in KWh. He explained fixed charge and running charge tariff, electricity billing and power costing, which consists of maximum demand charges, energy charges, Power Factor, fuel adjustment cost, electricity duty, Meter rentals and impact of depreciation on tariff.

In his lecture, Mr Akela deliberated on implementation of clean energy cost, associated steps for issuing the tariff order by SERC and Tariff Policy. He discussed the tariff determination process, its objective, methodology and operational cost components. He explained the importance of transparency in utility performance metrics in terms of technical, financial, operational, environmental and social factors. He further discussed the functional modalities of electricity transmission and distribution, Fuel Adjustment Cost (FAC) and implementation methodology of ISO 50001 Energy Management System. The speaker concluded his lecture with a briefing on CAPEX, the investment cost for power generation projects and OPEX, the expenditure and revenue incurred during the project period.

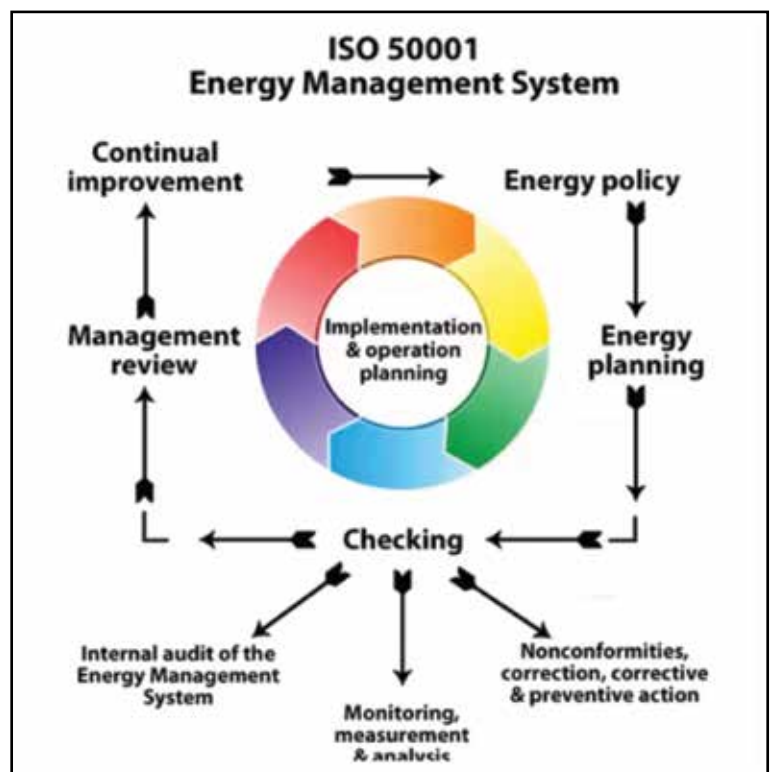
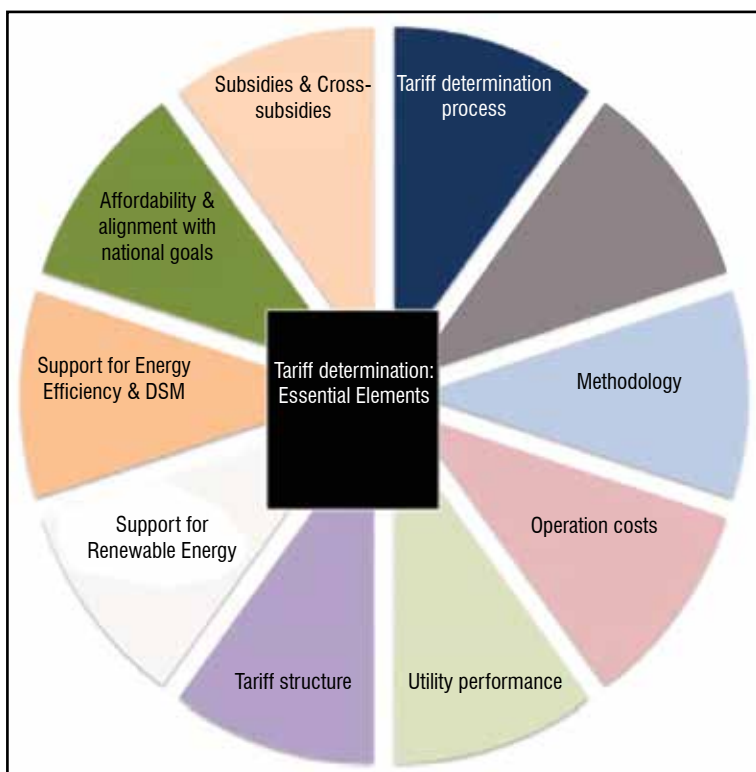
Moderator of the session, Dr Jignesh G Vaghasia summed up the Proceedings of deliberation. An interactive session was held at the end of the session. Mr Dipak Gomanbhai Patel, Honorary Secretary, South Gujarat Local Centre proposed the vote of thanks.



Mr Dinanath Akela



Dr Jignesh G Vaghasia





## Cloud Computing & Telecom Business Support System

West Bengal State Centre, IEI organized IEI Technical Webinar on the theme **Cloud Computing & Telecom Business Support System** on 22 October, 2021, under the aegis of Electronics & Telecommunication Engineering Division Board [ETDB], IEI. Panelists on the occasion, Mr Saibal Ghosh, Security Lead & Principal Solution Architect, Ericsson India Limited; and Mr Indrajit Nandi, IT Architect, Ericsson India Limited delivered lecture and shared their views and expertise. Mr Ram Chandra Chakraborty, Managing Director, PSI Metals India Private Limited moderated the session.



Mr Saibal Ghosh

Mr Saibal Ghosh deliberated his presentation on the topic 'Cloud Computing and Telcom'. He had started his deliberation with the definition of Cloud & the benefit it provides and mentioned Cloud as the ubiquitous back end for all forms of computing, including the Internet of Things (IoT). He stated that Resource pooling is the most fundamental characteristic of Cloud. He further discussed about Service Models & Deployment Models in the Cloud. Cloud computing is offered in three different service

models, each of which satisfy unique set of business requirements; These three models are known as Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS); he added. Mr Ghosh also discussed on different Deployment Models, namely Public Cloud, Private Cloud, Community Cloud, & Hybrid Cloud. He further mentioned some of the Popular Public Clouds, which include Amazon Web Services (AWS), Azure Cloud of Microsoft, Google Cloud, Oracle Cloud & IBM Cloud. The speaker then moved on to explain, how virtualization has become the backbone of Cloud. He discussed about microservice based applications and its' benefits, where, instead of using a single monolithic codebase, applications are broken down into a collection of smaller components, termed as microservices. He mentioned that each component can be individually developed, tested, deployed, and scaled. There is no dependency on other applications and the service enables the use of different programming languages, databases, and other tools, he further added.

He then explained about the principle of Containerization. He explained that the containers encapsulate an application into a single executable package along with all its related configuration files, libraries, and dependencies required for it to run.

It is not an idle coincidence that micro-service based architecture has become very popular along with the growth of containers because the containers allow the leeway for creating self-contained applications, which are micro-service-based applications, loosely coupled and can be independently deployed, he further mentioned. Each individual application

able to function independently as well as part of the whole composite, i.e. the micro-services can be linked together to form a larger application, he stated. He briefly touched upon security considerations for & governance in the Cloud. The speaker opined that, the primary issue about governing cloud computing is, an organization can never outsource responsibility for governance, even when using external providers. He concluded his with the forecast that in the foreseeable future, there will be an explosion in the application of Cloud computing, with its massive storage capabilities and elasticity and the maturing of micro services and cloud native architectures.



Mr Indrajit Nandi

Mr Indrajit Nandi deliberated his presentation on the topic 'Telecom Business Support System'. He started his deliberation with conceptualize Business Support System (BSS) and mentioned that BSS has taken the centre stage of the Telco network, where product, order, revenue and customer management take place in order to transform operator's assets into revenue. In recent years there has been much

progress in the way BSS applications interact with the underlying infrastructure, mainly through virtualization, he added. But this was not enough to meet the growing Cloud Solution Provider (CSP) demands of automation, speed, lower operational costs and agility. He stated that the Telcos are at a critical juncture, especially when they are entering a new era with 5G monetization challenges and opportunities and a re-architecture to cloud BSS is the answer. He explained further that Cloud BSS refers to the evolved BSS applications architecture that leverages all the benefits of the cloud infra-structure, such as deployment automation, automatic scalability, resources usage efficiency and built-in high availability.



Mr Ram Chandra Chakraborty

Moderator of the Session, Mr Ram Chandra Chakraborty, summed up the deliberations. A brief question-answer session was held at the end of the session, where the Panelists answered number of queries raised by the attendees.

Earlier, Mr Ram Chandra Chakraborty, who is also the Convenor, Electronics & Telecommunication Engineering Divisional Sub-committee, West Bengal State Centre delivered the introductory remarks. Mr Chanchal Chakraborty, Joint Convenor, Electronics & Telecommunication Engineering Divisional Sub-committee, West Bengal State Centre introduced the Panelists. Prof Nitosh Kumar Brahma, Honorary Secretary, West Bengal State Centre, IEI proposed the Vote of Thanks at the end of the Session.

## Optical Fiber Communication

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a maximum of 565 Mbps. He then described that SDH replaced PDH very fast in terms of capacity as high as 10 Gbps.

Mr Bhattacharya discussed about Wavelength Division Multiplexing (WDM), a fiber optic transmission technique that enables the use of multiple light wavelengths or colours to send data over the same medium. He explained that two or more colours of light can travel on one fiber, and several signals can be transmitted in an optical waveguide at differing wavelengths or frequencies on the optical spectrum. Multiple high-bit-rate data streams of 10 Gb/s, 40 Gb/s, 100 Gb/s, 200 Gb/s and more recently, 400 Gb/s and 800 Gb/s, each carrying distinct throughputs, can be multiplexed over a single fiber, he explained further.



Mr Ram Chandra Chakraborty

He further explained the variants of WDM technology, namely Coarse Wavelength Division Multiplexing (CWDM) and Dense Wavelength Division Multiplexing (DWDM). He also discussed on Optical Transport Network and its components, namely Optical Add Drop Multiplexer (OADM), Reconfigurable Optical Add Drop Multiplexer (ROADM), In Line Amplifier (ILN) and Erbium Doped Fiber Amplifier (EDFA). He

discussed the automatic switching of the path in case of failure with dynamic restoration philosophy using features like Dynamic Re-routing, Preset Re-routing and Soft Re-routing. Moderator of the Session, Mr Ram Chandra Chakraborty, summed up the deliberations. Prof Nitosh Kumar Brahma, Honorary Secretary West Bengal State Centre extended Vote of Thanks at the end of the session.

# IEI Celebrates

# 54<sup>th</sup> Engineers' Day

## Engineers for Skill Development & Employment in Combating COVID

The 54<sup>th</sup> Engineers' Day was celebrated by the Institution all over the country on September 15, 2021 to commemorate the 161<sup>st</sup> birth anniversary of legendary Engineer-Statesman Bharat Ratna Sir M Visvesvaraya. Brief accounts of the celebration as received from various Centres are highlighted hereunder.

### STATE CENTRES

#### Rajasthan

Rajasthan State Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through hybrid mode. Hon'ble Governor of Rajasthan, Shri Kalraj Mishra graced the occasion as Chief Guest with his virtual presence. Dr T M Gunaraja, Immediate Past President, IEI and Mr Sisir Kumar Banerjee, Past President, IEI were the Guests of Honour. Earlier, Mr Sajjan Singh Yadav, Chairman, Rajasthan State Centre and Council Member, IEI welcomed the Chief Guest, Guests of Honour and other dignitaries. Mr Mahendra Kumar Chauhan, Honorary Secretary, Rajasthan State Centre, IEI proposed the vote of thanks.

#### Uttar Pradesh

Uttar Pradesh State Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through online mode. Chief Guest & Keynote Speaker of the event, Prof Bharat Raj Singh, a Noted Environmentalist and Director General of SMS Institute, Lucknow addressed the gathering on the ancient education system and opined that the culture, ethics and skill based knowledge in the education system be revived. The convenor of the programme, Mr V B Singh, Council Member, IEI discussed on the theme and Mr R K Trivedi, Chairman, Uttar Pradesh State Centre and Council Member, IEI welcomed the guests. Mr Masarrat Noor Khan, Chairman (Elect) Uttar Pradesh State Centre highlighted the life sketch of Sir M Visvesvaraya. The programme was concluded with the vote of thanks delivered by Dr Jaswant Singh, Honorary Secretary (Elect), Uttar Pradesh State Centre, IEI.

#### West Bengal

West Bengal State Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through online mode. On the occasion, Dr S S Mallick, Associate Professor, Department of Mechanical Engineering, Thapar Institute of Engineering & Technology and Managing Director, Bulk Solids Innovation India Private Limited graced the occasion as Chief Guest and delivered the thematic address. Dr Mallick deliberated his presentation on skill development and opined that software based design development and implementations are important to improve the employment strategy in the post pandemic times. Mr Sujit Kumar Banerjee, Council Member, IEI also spoke on the occasion. Earlier, Mr Sandip Kumar Deb, Chairman, West Bengal State Centre and Council Member, IEI welcomed the august house. Prof Nitosh Kumar Brahma, Honorary Secretary, West Bengal State Centre, IEI proposed the vote of thanks.

### LOCAL CENTRES

#### Agra

Agra Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 at Agra. On the occasion, Mr Umesh Chand Sharma, Member, Environment Impact Committee, Government of Uttar Pradesh was the Guest of Honour. Dr Ajay Kumar Sharma, Associate Professor and HoD, Department of Bio-technology, Farah Mathura delivered lecture on the topic 'Nature Inspired Engineering'. Mr Ajit Faujdar, Managing Director, CEMG Engineering & Consultant Private Limited. spoke on employment generation of the engineers, Engineers' Bill etc. Earlier, Dr Ashok Yadav, Chairman, Agra Local Centre, IEI welcomed the gathering. Mr Devendra Singh Chaudhary, Honorary Secretary, Agra Local Centre also present in the programme. The function was concluded with vote of thanks proposed by Dr Ashok Yadav, Chairman, Agra Local Centre.

#### Aurangabad

Aurangabad Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 at Aurangabad. Mr Vijay Ghogare, Chief Engineer, Water Resource Department, Aurangabad Region was the Chief Guest & Mr P L Kokil, Director, Sanjay Technoplast Private Limited, Aurangabad was the Keynote Speaker of the programme. Dr D C Gour, Chairman, Aurangabad Local Centre, IEI delivered the welcome address. Prof Sandeep Bagwanrao Mundhe, Honorary Secretary, Aurangabad Local Centre, IEI presented the life sketch of Bharat Ratna, Sir M Visvesvaraya and at the end, proposed the vote of thanks.

#### Bhimavaram

Bhiavaram Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through online platform. Chief Guest of the event, Dr Enti Ranga Reddy, Council Member, IEI delivered speech on the topic 'Post Pandemic Conditions of Covid'. The programme was started with welcome address by Dr V K Viswanadha Raju, Chairman, Bhimavaram Local Centre. Mr Karnam Suresh Babu, Honorary Secretary, Bhimavaram Local Centre, IEI proposed the vote of thanks.

#### Brahmapur

Brahmapur Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 at Brahmapur. Chief Guest of the session, Mr Ashim Kumar Mahapatra, Engineer-in-Chief cum Special Secretary, Department of Water Resources, Government of Odisha delivered speech on the present industrial scenario of the state as well as the country. Mr Ashesh Kumar Padhy, Vice President & Head, Project, Integrated Steel Project, PARADIP JSW Utkal Steel, Odisha being the Chief Speaker of the occasion. Dr Rajat Kumar Panigrahy, Principal, Government Industrial Training Institute, Brahmapur was the speaker on the occasion. During deliberation of lecture he explained the innovative ideas which were utilized for creating some equipment to provide support to the COVID-19 patients as well as the corona warriors at affordable cost. Dr Arun Kumar Padhi, Chairman, Brahmapur Local Centre, IEI welcomed the august gathering and conveyed heartfelt thanks to all. Mr Surendra Kumar Panigrahi, Honorary Secretary, Brahmapur Local Centre, IEI proposed the vote of thanks.

#### Gorakhpur

Gorakhpur Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 at Gorakhpur. Mr A K Asthana, Member, Uttar Pradesh State Centre, IEI expressed his views on the theme. Mr Dharendra Chaturvedi, Chairman, Gorakhpur Local Centre, IEI briefed the life sketch of the great visionary. Mr Ved Prakash Gupta, Honorary Secretary, Gorakhpur Local Centre, IEI proposed the vote of thanks.

#### Jabalpur

Jabalpur Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 19 September 2021 at Jabalpur. Mr Shobhan Chaudhuri, Additional General Manager, West Central Railway, Jabalpur graced the function as Chief Guest and Brigadier Suresh S, Commandant and Managing Director, 506 Army Base Workshop, Jabalpur was the Guest of Honour and Keynote speaker. Mr Tarun Kumar Anand, Chairman, Jabalpur Local Centre, IEI delivered the welcome address. Mr Prakash Chandra Dubey, Honorary Secretary, Jabalpur Local Centre proposed the vote of thanks.

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## IEI Celebrates **Royal Charter Day**

The Institution of Engineers (India) was incorporated by Royal Charter on September 9, 1935 by King and Emperor George V at the Court at Buckingham Palace, London and remains the only professional body in India to be accorded this Honour. This endowed the Corporate Members of the Institution with the right to use the title 'Chartered Engineer' after their names, implying that they are qualified engineers deemed worthy to hold a Charter. The 'Royal Charter Day' was celebrated by IEI all over the country on September 9, 2021. A brief accounts of celebration as received from various Centres are reported hereunder.

### LOCAL CENTRES

#### Bhimavaram

Bhimavaram Local Centre, IEI observed Royal Charter Day on 9 September 2021 through online mode. Chief Guest of the event, Prof (Dr) K Brahma Raju, Council Member, IEI deliberated lecture on the occasion. The programme was started with welcome address by Mr Vegesna Kasi Viswanadha Raju, Chairman, Bhimavaram Local Centre, IEI. Mr Karanam Suresh Babu, Honorary Secretary and Dr Jasti Sudhir Kumar, Past Chairman, Bhimavaram Local Centre, IEI also present during the function.

#### Jamshedpur

Jamshedpur Local Centre, IEI observed Royal Charter Day on 9 September 2021 via online platform. A technical webinar was organised on this occasion. Mr Harendra Verma, Head, T&D, Tata Steel Limited deliberated lecture on the topic 'Power System Reliability Improvement Initiatives at Electrical T&D, Tata Steel'. Mr Somnath Chatterjee, Group Head of TG and Switchyard in the Electrical Maintenance Department, Tata Power Limited deliberated lecture on 'Reliability Improvement Initiatives by Electrical Maintenance Department, Tata Power'. Earlier, Mr Anurag Saxena, Chairman, Jamshedpur Local Centre,

IEI welcomed the gathering and explained about the Royal Charter Day. The function was concluded with vote of thanks proposed by Mr Pravesh Kumar Dhawan, Honorary Secretary, Jamshedpur Local Centre, IEI.

#### Kalpakkam

Kalpakkam Local Centre, IEI observed Royal Charter Day on 17 September 2021 at Kalpakkam. On the occasion, Mr R Kannan, Scientific Officer/E, Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam delivered presentation on the topic 'Role of Dynamic Strain Ageing during Cyclic Deformation'. Earlier, Mr M Shanmuga Sundaram, Honorary Secretary, Kalpakkam Local Centre, IEI welcomed the audience and at the end of the session, proposed the vote of thanks.

#### Tuticorin

Tuticorin Local Centre, IEI observed Royal Charter Day on 13 September 2021 at Tuticorin. On the occasion, Mr M Nagarajan, Executive Engineer (O&E), Tuticorin Thermal Power Station graced the event as Keynote speaker. Earlier, Mr I Maria Michael Raj, Past Chairman, Tuticorin Local Centre welcomed the participants. Mr A Ravichandran, Honorary Secretary, Tuticorin Local Centre proposed the vote of thanks.

## IEI Celebrates **54<sup>th</sup> Engineers' Day**

Contd. from page 10

#### Kalpakkam

Kalpakkam Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 29 September, 2021 at Kalpakkam. Chief Guest of the session, Prof R Velraj, Vice-Chancellor, Anna University, Chennai deliberated lecture on the theme. Dr M Jayashree, and Dr J Ashraj Ali, Department of Atomic Energy Hospital, Kalpakkam deliberated on how the DAE hospital effectively handled Covid-19 during the first wave. Earlier, Mr Raju Ramakrishnan, Chairman, Kalpakkam Local Centre, IEI welcomed the audience. Mr M Shanmuga Sundaram, Honorary Secretary, Kalpakkam Local Centre, IEI introduced the speaker and, at the end, proposed the vote of thanks.

#### Kochi

Kochi Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through online mode. On the occasion, Mr S Suhas, IAS, Managing Director, Cochin International Airport Limited and Former Ernakulam District Collector deliberated lecture on the session. Mr V Vijayachandran Nair, Council Member, IEI; Mr T P Raveendran, Chairman, Kochi Local Centre and Council Member, IEI and Mr M P Eldhose, Honorary Secretary, Kochi Local Centre, IEI also spoke on the occasion.

#### Palghat

Palghat Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 26 September 2021 through virtual platform. Panellist, Prof (Dr) Vishal R Sardeshpande, Associate Professor (Adjunct), Indian Institute of Technology Mumbai deliberated lecture on the theme. In his address, he focussed on employment generation, job enrichment and sustainable environment. Earlier, Mr K Unni Krishnan, Chairman, Palghat Local Centre, IEI welcomed the Keynote speaker and other participants of the webinar. Mr A Ramesh, Honorary Secretary, Palghat Local Centre, IEI proposed the vote of thanks.

#### Pune

Pune Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 in hybrid mode. On the occasion, Keynote speaker, Prof Charudatta S Pathak, Vice Chancellor, Symbiosis University of Applied Sciences, Indore deliberated lecture on the theme. Padmabhushan Dr J B Joshi, Institute of Chemical Technology, Mumbai Homi Bhabha National Institute, Mumbai Marathi Vidnyan

Parishad, Mumbai deliberated presentation on 'Opportunities Entrepreneurship and Employment in post Amritmohotsov of Independent India for Next at Least 100 Years by Giving Typical Process Engineering Details of Hydrogen which is Tomorrows Need'. Earlier, welcome address delivered by Prof Kamal Kumar Ghosh, Chairman, Pune Local Centre, IEI and Council Member, IEI. Dr Aaradhana Arvind Deshmukh, Honorary Secretary, Pune Local Centre proposed the vote of thanks.

#### Tuticorin

Tuticorin Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 at Tuticorin. Mr S Kaja Moideen, Superintending Engineer, Electrical System, Tuticorin Thermal Power Station graced the event as Chief Guest and delivered address on the theme. He cited various challenges in post COVID times, that include depletion of conventional fuel resources, widening gap between the existing education modules & expectations of employers and accelerated application of digitization in every sector. He felt that innovative changes and initiatives in product, process and system development is the need of the hour. Earlier, Mr I Maria Michael Raj, Past Chairman, Tuticorin Local Centre welcomed the participants. Mr A Ravichandran, Honorary Secretary, Tuticorin Local Centre, IEI proposed the vote of thanks.

#### Varanasi

Varanasi Local Centre, IEI observed 54<sup>th</sup> Engineers' Day on 15 September 2021 through online mode. On the occasion, Prof Durg Singh Chauhan, Former Vice-Chancellor, Uttar Pradesh Technical University, Utrakhnad Technical University, Lovely Professional University, Jaypee University of Information Technology and Secretary General, Association of Indian University and presently Vice-Chancellor, GLA University, was the Chief Guest and Dr Madhu Ranjan Kumar, IRSS, Former Joint Secretary, Department of Higher Education, Ministry of Education, Government of India, the Guest of Honour. Earlier, Prof (Dr) Siddh Nath Upadhyay, Chairman, Varanasi Local Centre, IEI welcomed the participants of the webinar and mentioned that engineers are expected to carry out professional activities in an eco-friendly and sustainable manner to avoid adverse impacts on the ecosystem. Mr Santosh Kumar, Honorary Secretary, Varanasi Local Centre, IEI proposed the vote of thanks.

# IEI Celebrates World Habitat Day

## Theme

## Accelerating Urban Action for a Carbon-free World

The World Habitat Day was celebrated by the Institution on October 4, 2021. Brief accounts of celebration as received from various Centres are reported hereunder.

### STATE CENTRES

#### Himachal Pradesh

Himachal Pradesh State Centre, IEI observed World Habitat Day in collaboration with NSDF, IEI on 4 October 2021 through hybrid mode. Er Narendra Singh, President, IEI graced the function as Chief Guest and presided over the function. Keynote speaker of the day, Dr Sanjay Sood, Additional Principal Chief Conservator of Forest (M&E) delivered online lecture on the theme 'Role of Ancient India towards Modern Day Science and Environmental Conservation'. Mr Pankaj Dadwal, Chairman, Himachal Pradesh State Centre and Council Member, IEI welcomed Er Narendra Singh, President, IEI; Mr Suneel Grover, Chairman, NSDF, IEI; Dr H R P Yadav, Director HQ Cell, New Delhi; Speaker and all participants. Dr H R P Yadav, Director HQ Cell informed the august gathering about the theme of the webinar. Ms Kusum Sharma, Honorary Secretary, Himachal Pradesh State Centre, IEI proposed the vote of thanks.

#### Telangana

Telangana State Centre, IEI observed World Habitat Day on 4 October 2021 through online mode. On the occasion, Prof G Radhakrishna, Joint Honorary Secretary, Telangana State Centre, IEI delivered lecture on the theme. Prof (Dr) Ramana Bhanothu, Chairman, Telangana State Centre, IEI presided over the function. Mr B Brahma Reddy, Chairman-Elect, Telangana State Centre, IEI and Past Chairmen, Past Honorary Secretaries of the Host Centre and Council Members of IEI were also present in the function. Mr T Anjiah, Honorary Secretary, Telangana State Centre, IEI proposed the vote of thanks.

### LOCAL CENTRES

#### Bareilly

Bareilly Local Centre, IEI observed World Habitat Day on 4 October 2021 at Bareilly. Mr S C Mehra, Past Chairman, Bareilly Local Centre, IEI delivered lecture on the theme. Earlier, Mr Sudhir Kumar Gupta, Chairman, Bareilly Local Centre, IEI delivered the welcome address and briefed the audience about the theme of the World Habitat Day. The programme was concluded with vote of thanks by Mr Mahendrakumar Agarwal, Honorary Secretary, Bareilly Local Centre, IEI.

#### Bhimavaram

Bhimavaram Local Centre, IEI observed World Habitat Day on 4 October 2021 through virtual mode. Chief Guest of the day, Dr Siva Ramakrishna Mandeti, Associate Professor, University of Santiago, Chile delivered lecture on the occasion. Earlier, Mr Vegesna Kasi Viswanadha Raju, Chairman, Bhimavaram Local Centre, IEI welcomed the Chief Guest and other participants of the webinar. Prof (Dr) K Brahma Raju, Council Member, IEI also explained the importance of the day. The webinar was organised by Mr Karanam Suresh Babu, Honorary Secretary, Bhimavaram Local Centre, IEI.

#### Durgapur

Durgapur Local Centre, IEI observed World Habitat Day through hybrid mode on 9 October 2021. Speaker of the event, Ms Tishya Roy, Assistant Town Planner, Asansol Durgapur Development Authority, delivered lecture on the theme. Prof (Dr) Kartik Chandra Ghanta, Chairman, Durgapur Local Centre, IEI delivered the welcome address and mentioned about the initiative and contribution of engineers in urbanisation with less or reduce carbon foot print. On the occasion, Mr Parasuram Shaw, General Manager, SAIL-MTI; Prof (Dr) Pradosh Kumar

Adhvaryu, Director, Siliguri Institute of Technology also shared their views. Mr M K Biswal, Honorary Secretary, Durgapur Local Centre, IEI proposed the vote of thanks.

#### Gwalior

Gwalior Local Centre, IEI observed World Habitat Day on 4 October 2021 at Gwalior. Mr Rajendra Singh Bhadoriya, Retired Chief Engineer, PHE Department delivered lecture explaining the importance of the occasion. Mr Pramod Saxena, Retired General Manager, Hindustan Aeronautics Limited, Lucknow; Mr R K Khetan, Visiting Professor, IPS Institution also spoke on the occasion. Earlier, Mr Prabhat Kumar Bhargava, Chairman, Gwalior Local Centre, IEI delivered the welcome address. Mr P Y Khanwilkar, Honorary Secretary, Gwalior Local Centre, IEI in his concluding remarks, opined that engineers needs to proceed further for improvement in technologies and skills for better economy and sustainable development. At the end of the session, he also proposed the vote of thanks.

#### Jamshedpur

Jamshedpur Local Centre, IEI observed World Habitat Day through virtual mode on 4 October 2021. Keynote Speaker of the session, Prof Anil Kumar Choudhary, Department of Civil Engineering, NIT Jamshedpur spoke about the importance of World Habitat Day and introduced the theme. He highlighted that World Habitat Day principally amplifies Race to Zero campaign and encourage to develop actionable zero carbon plans. The function was started with welcome address delivered by Mr Anurag Saxena, Chairman, Jamshedpur Local Centre, IEI. The function was concluded with vote of thanks proposed by Mr Pravesh Kumar Dhawan, Honorary Secretary, Jamshedpur Local Centre, IEI.

#### Kochi

Kochi Local Centre, IEI observed World Habitat Day through online platform on 4 October, 2021. On the occasion, Mr P A Abdu, CEO & Chief Consultant, M/s Envalyu Engineers & Valuers, Cochin delivered presentation on urbanization of Kerala State. Earlier, Mr T P Raveendran, Chairman, Kochi Local Centre and Council Member, IEI welcomed the gathering. At the end, Mr M P Eldhose, Honorary Secretary, Kochi Local Centre, IEI proposed the vote of thanks.

#### Palghat

Palghat Local Centre, IEI observed World Habitat Day on 4 October 2021 via online platform. On the occasion, Keynote Speaker, Dr P R Sreemahadevan Pillai, Director, Ahalia Group of Academic Institutions delivered lecture on the theme and deliberated on greenhouse effect, mitigation strategy to reduce carbon emission etc. Earlier, Mr K Unni Krishnan, Chairman, Palghat Local Centre IEI delivered the welcome address. Mr A Ramesh, Honorary Secretary, Palghat Local Centre, IEI proposed the vote of thanks.

#### Tiruchirappalli

Tiruchirappalli Local Centre, IEI observed World Habitat Day on 4 October 2021 through online platform. Chief Guest of the function, Dr R Gandhimathi, Associate Professor, Department of Civil Engineering, National Institute of Technology Tiruchirappalli delivered the theme address and highlighted the issue of poverty and pledges to create shelter for all. He also emphasized on enhanced applications of renewable resources. Earlier, Prof (Dr) Natarajan Kumaresan, Chairman, Tiruchirappalli Local Centre, IEI welcomed the gathering. Mr S Samidoss, Past Chairman, Tiruchirappalli Local Centre introduced the speaker to the audience. Dr S Karuppasamy, Past Chairman, Tiruchirappalli Local Centre, IEI proposed the vote of thanks.

# IEI Celebrates World Standards Day

## Theme

### Our Shared Vision for a Better World

The World Standards Day was celebrated by the Institution on October 14, 2021. Brief accounts of celebration as received from various Centres are reported hereunder.

## STATE CENTRES

### Puducherry

Puducherry State Centre, IEI observed World Standards Day on 25 October 2021 at Puducherry. Dr K Sankaranarayanan, Director, National Institute of Technology Puducherry graced the occasion with his august presence and addressed the audience. Dr Narendran Rajagopalan, HoD, Department of Computer Science & Engineering, National Institute of Technology Puducherry and Dr N Sendhil Kumar, Assistant Professor and Head, Department of Mechanical Engineering and Associate Dean (Faculty Welfare) National Institute of Technology Puducherry delivered lecture on the theme. Prof (Dr) Raman Saravanane, Chairman, Puducherry State Centre & Council Member, IEI and Prof (Dr) B Radjaram, Honorary Secretary, Puducherry State Centre, IEI addressed the audience.

### Punjab & Chandigarh

Punjab & Chandigarh State Centre, IEI observed 'World Standards Day on 14 October 2021 through online mode. Chief Guest of the event, Prof (Dr) N R Bandyopadhyay, Visiting Professor & Former Head, School of Materials Science & Engineering, Indian Institute of Engineering Science & Technology Shibpur concurred the wisdom of sustainable development through the need of standardization and accented on development of standards which sustain material civilization. On the occasion, Prof P Thareja, Certified Lean Six Sigma Black Belt & Lead Auditor (QMS & EMS) delivered the coveted theme address. Earlier, Mr Sukhvir Singh Mundi, Chairman, Punjab & Chandigarh State Centre & Council Member, IEI welcomed the Chief Guest, Keynote Speaker and participants. Prof (Dr) Baljit Singh, Honorary Secretary, Punjab & Chandigarh State Centre, IEI proposed the vote of thanks.

### Telangana

Telangana State Centre of the Institution observed World Standards Day on 14 October 2021 through online mode. On the occasion, Mr B Brahma Reddy, Chairman-Elect, Telangana State Centre, IEI delivered lecture on the theme. Prof (Dr) Ramana Bhanothu, Chairman, Telangana State Centre, IEI presided over the function. Mr T Anjaiah, Honorary Secretary, Past Chairmen, Past Honorary Secretaries, Council Members of IEI and other committee members of the centre also present in the session. Prof G Radhakrishna, Joint Honorary Secretary of the State Centre, IEI proposed the vote of thanks.

## LOCAL CENTRES

### Bathinda

Bathinda Local Centre, IEI observed World Standards Day on 31 October 2021 by organising a webinar. Prof (Dr) Tara Singh Kamal, Council Member, IEI graced the occasion as Chief Guest and addressed the audience. Dr Labh Singh, Former Advisor to DoT, Government of India was the speaker. Mr Gagandeep Kaur, Assistant Professor, Electronics and Communication Engineering Department, Yadavindra College of Engineering, Talwandi Sabo moderated the session. Earlier, Prof (Dr) Jagtar Singh, Chairman, Bathinda Local Centre and Council Member, IEI welcomed the panellist and other participants. Mr J S Deol, Honorary Secretary, Bathinda Local Centre, IEI proposed the vote of thanks.

### Gorakhpur

Gorakhpur Local Centre, IEI observed World Standards Day on 20 October 2021 at Gorakhpur. Prof (Dr) Shantanu Rastogi, Professor and Head, Department of Physics, Deen Dayal Upadhyay Gorakhpur University was the speaker of the day. Earlier, Mr Dharendra Chaturvedi, Chairman, Gorakhpur Local Centre welcomed all. Mr Ved Prakash Gupta, Honorary Secretary, Gorakhpur Local Centre introduced the theme of the day and at the end, proposed the vote of thanks.

### Gwalior

Gwalior Local Centre, IEI observed World Standards Day on 14 October 2021 at Gwalior. Speaker of the session, Prof S K Agrawal, Former Professor and HoD, Motilal Nehru National Institute of Technology Allahabad delivered lecture on process standardization. Mr U S Pande, Retired Superintending Engineer, PHE Department ; Mr Rahul Khanvilkar, Comviva Limited; Prof P K Jain, Former Professor, Madhav Institute of Technology & Science, Gwalior delivered lecture on the topic. Earlier, Mr Prabhat Kumar Bhargava, Chairman, Gwalior Local Centre, IEI welcomed the speakers and all other dignitaries. Mr P Y Khanvilkar, Honorary Secretary, Gwalior Local Centre proposed the vote of thanks.

### Kalpakkam

Kalpakkam Local Centre, IEI observed World Standards Day on 13 October 2021 at Kalpakkam through hybrid mode. Speaker of the day, Mr M Krishnamoorthy, Head, Fabrication Section, Central Workshop, Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam deliberated lecture on the topic 'Our Shared Vision for a Better World in Metal Joining' through virtual mode. He explained the importance of quality control and standards in welding for manufacturing nuclear components. Mr M Shanmuga Sundaram, Honorary Secretary, Kalpakkam Local Centre, IEI welcomed the audience and at the end, proposed the vote of thanks.

### Madurai

Madurai Local Centre, IEI observed World Standards Day on 15 October 2021 and organised a lecture meeting through online platform. Chief Guest of the session, Prof Elangovan Rajagopalan, KCG College of Technology, Retired Scientist, ISRO GSLV Team delivered lecture on the theme. Earlier, Mr S Rajagopal, Chairman, Madurai Local Centre and Council Member, IEI delivered the welcome address. Mr P Rajamani, Council Member, IEI was present during the event. At the end of the session, Mr R Narayanasamy, Honorary Secretary, Madurai Local Centre, IEI proposed the vote of thanks.

### Palghat

Palghat Local Centre, IEI observed World Standards Day on 18 October 2021 in online platform. On the occasion, Speaker, Mr Rajeev P, Scientist F & Head, BIS, Kochi Branch Office deliberated lecture on the topic 'Our Shared Vision for a Better World'. Earlier, Mr K Unni Krishnan, Chairman, Palghat Local Centre, IEI welcomed the Keynote speaker, dignitaries and participants attending the webinar. Mr A Ramesh, Honorary Secretary, Palghat Local Centre, IEI proposed the vote of thanks at the end of the session.

### Rourkela

Rourkela Local Centre, IEI observed World Standards Day on 22 October 2021 through hybrid mode. On the occasion, Mr Peddina Satyanarayana, General Manager, Research & Control Laboratory, SAIL, Rourkela Steel Plant deliberated lecture on the theme 'Our Shared Vision for a Better World'. Earlier, Dr Rama Chandra Pradhan, Honorary Secretary, Rourkela Local Centre, IEI welcomed the audience. Mr Ajay Kumar Goswami, Chairman, Rourkela Local Centre, IEI expressed his thankfulness to the speaker and audience. At the end, Dr Rama Chandra Pradhan, Honorary Secretary, Rourkela Local Centre proposed the vote of thanks.

### Tiruchirappalli

Tiruchirappalli Local Centre, IEI observed World Standards Day on 14 October 2021 through virtual mode. Chief Guest of the event, Dr S Dharmalingam, Past Chairman, Tiruchirappalli Local Centre delivered the theme address on the topic 'Standards for Sustainable Development Goals – Shared Vision for a Better World'. Earlier, Prof (Dr) Natarajan Kumaresan, Chairman, Tiruchirappalli Local Centre, IEI welcomed the audience and introduced the speaker. Dr S Karuppasamy, Past Chairman, Tiruchirappalli Local Centre, IEI proposed the vote of thanks.

### Varanasi

Varanasi Local Centre, IEI observed World Standard Day on 14 October 2021 in virtual mode. Speaker, Prof K R C Reddy, Former Head, Department of Rasa Shastra and Bhaisajya Kalpana, Faculty of Ayurveda, Institute of Medical Sciences, BHU, Varanasi deliberated lecture on the topic 'Need for Standardization of Ayurvedic Drugs'. Earlier, Prof (Dr) Siddh Nath Upadhyay, Chairman, Varanasi Local Centre, IEI delivered the welcome address. Mr Ramashanker Prasad Gupta, Chairman (Elect) Varanasi Local Centre, IEI introduced the theme of the day. Mr Santosh Kumar, Honorary Secretary, Varanasi Local Centre, IEI proposed the vote of thanks.

# News-in-Brief

The following are the brief account of Technical Activities organised by various Centres and Fora of the Institution.

## STATE CENTRES

### Gujarat

Organised the inaugural function of an exclusive six-day online training programme for students on 'Soft Skills, Life Skills and Career Planning' on 14 August 2021 jointly with L D College of Engineering, Ahmedabad. Chief Guest of the programme, Dr Ing. A K Singh, Director, IITE, INDUS University, Ahmedabad graced the occasion as Chief Guest and addressed the audience. Keynote Speaker, Dr Ketan P Badgular, Professor & Head, Electrical Engineering Department, S & S Government Engineering College, Bhavnagar explained the objective and background of this training program in detail. He deliberated on different soft skills and career planning.

Organised technical talk jointly with Water Management Forum, IEI on the topic 'Internet of Things (IoT) for Monitoring Water Quality in Piped Network' on the occasion to celebrate the 62<sup>nd</sup> Foundation Day of Gujarat State Centre on 1 September 2021. Mr Navinchandra Vasoya, Past President, IEI and National Member, Executive Council, WFEO was the Chief Guest of the session. Guests of Honour were Mr Bharat S Patel, Council Member, IEI and Mr P M Chaudhary, Chief Engineer & Additional Secretary (Capital Project), Roads & Building Department, Government of Gujarat and Chairman (Elect) of Gujarat State Centre also addressed on the occasion. Keynote Speaker, Dr Vrushank Shah, Head, Electronics and Communication Engineering, Indus Institute of Technology and Engineering, INDUS University, Ahmedabad delivered speech on the theme 'Internet of Things (IoT) for Monitoring Water Quality in Piped Network' with illustration and examples.

### Maharashtra

Organised technical lecture meeting through online mode on 4 September 2021 on the topic 'Production and Environmental Challenges in a Chemical Industry'. On the occasion, Mr Hariharan Mahadevan, Advisor/Consultant to ANRAK Aluminium Limited, Hyderabad and Maa Kudargarhi Group, Raipur deliberated lecture on the topic and discussed on the applications of chemical industry with special reference to hydrated and calcined Alumina Industry.

### Puducherry

In association with Department of Electronics Engineering, School of Engineering and Technology, Pondicherry University (A Central University) organised webinar on the topic 'Accelerating Digital Transformation in Challenging Times' to commemorate the World Telecommunication and Information Society Day on 31 August 2021. Dr A Athif Shah, Founder and CEO, M/s ABE Semiconductor Designs, Chennai delivered the lecture on the theme of the day. Prof T Chithralekha, Professor and Dean, School of Engineering and Technology, Pondicherry University addressed the audience.

### Tamil Nadu

Organised Panel Discussion on the theme 'Academia Perspective : Challenges faced by Aerospace Training Sector to Meet Future Industry Demand with Respect to COVID Operational Constraints' on 17 July 2021 through online mode. Dr S Pandian, Former Director, Satish Dhawan Space Centre, ISRO, Vikram Sarabhai Distinguished Professor was the Chief Guest of the event and Prof S Thanigaiarasu, MIT Chennai; Mr K Vadivuchezhian, NIT Surathkal and Prof G Ramesh, GCEM, Bengaluru were the Guest Speakers.

### Telangana

Organised Dr N V R L N Rao 4<sup>th</sup> Endowment Lecture on the topic 'Urban Transportation – Smart Infrastructure – Needs and Challenges' on 26 October 2021 through online mode. On the occasion, Prof (Dr) Molugaram Kumar, Principal, University College of Engineering, Osmania University addressed the gathering as Chief Guest and shared his expertise and experience. He mentioned that policy makers should focus on the importance of prioritizing implementation of intelligent infrastructure, which will underpin the smart initiatives, while being able to accommodate further technological augmentation in the future.

Organized Mr R L Raju Seventh Endowment Lecture on 'Enhancing Water Use Efficiency in Irrigation Water Management – A Way Forward for Water Conservation & Irrigation Development in the State of Telangana' at Hyderabad on 10 October 2021. Chief Guest of the event, Dr I Satyanarayana Raju, Past Chairman, Telangana State Centre, IEI delivered lecture on the topic and stressed on enhancement in water use efficiency through the management of irrigation water by water reservation, crop rotation etc.

## LOCAL CENTRES

### Tirunelveli

Organised seminar on the topic 'Demystifying Digital Transformation for the Industrial Engineers on 3 September 2021 at Tirunelveli. Mr Balaji, CEO & Founder, Jilaba Software Solutions, Chennai graced the seminar as Chief Guest and delivered the Keynote address. In his speech, he insisted about the industry expectation from fresh engineers and encourage the students to be aware about the digital technologies including Artificial Intelligence, Big Data and Data Science.

### Bareilly

In association with ANA Institute of Management & Technology, Bareilly organised technical webinar on 27 July 2021 on the theme 'The Need & Modes of Spurring Students Innovation'. On the occasion, Mr Sanjay Nagi, Managing Director, Tomorrow's Market Innovations Private Limited, deliberated lecture on the topic.

In association with SRMS Institute of Management & Technology, Bareilly organised webinar on 29 July 2021 on the topic 'Material Selection in Rapid Prototyping'. Mr Kamlesh Verma, Vice President, Alps Industries Limited; Dr Pankaj Sharma, Director, Rajshree Institute, Bareilly and Dr Sudhakar Jain, Dean & Acting Director of Shri Siddhi Vinayak Group of Institutions deliberated lecture on the topic.

### Bathinda

Observed World Environment Day on 5 June 2021 through online platform. Prof (Dr) Gursharan Singh Randhawa, Director, Punjabi University, Guru Kashi Campus Talwandi Sabo graced the occasion as Chief Guest. Dr Adarash Pal Vig, Professor & Head (UGC-HDRC), Department of Botanical & Environmental Sciences, Guru Nanak Dev University, Amritsar delivered the Keynote address. Prof (Dr) Pushpinder Singh Gill, Dean, Academic Affairs, Punjabi University, Patiala also spoke on the occasion.

### Belagavi

Organised technical talk through virtual platform on the topic 'Concrete Mix Design for Provisions in IS: 456 and Guidelines in IS: 10262' on 17 July, 2021. Dr N P Rajamane, Founder & Former Head, Centre for Advanced Concrete Research (CACR), SRM University, IST, AML, CSIR-SERC, Advisor (R&D), CASHUTEC, Raichur & Technical Advisor, Gopolymer Concrete, Madhuri was the Keynote speaker of the webinar.

Organized technical talk through virtual platform on the topic 'Aircraft Development Procedure – Military Aircrafts' on 9 August 2021. Mr Ashok G Pai, Additional General Manager (Retd.), HAL, Bengaluru was the Keynote speaker of the webinar.

Organized webinar on the topic 'Social Media Awareness' on 28 August 2021. Mr Pramod Alappanavar, System Analyst, S G Balekundry Institute of Technology, Belagavi was the speaker of the webinar.

#### **Gwalior**

Organised seminar on 'Concrete R Failure & Repairs' on 4 August 2021 at Gwalior. Speaker of the session, Mr Vaibhav Anil Shinde, Sales Engineer, Madhya Pradesh Fosroc Chemicals (India) Private Limited, deliberated lecture on the topic. During deliberation he discussed the cause of defects of concrete structures and repairs of the same. He further discussed on Reinforcement Corrosion and remedial measures. In the inaugural session, Mr Prabhat Kumar Bhargava, Chairman, Gwalior Local Centre, IEI briefed about the repair of the historical office buildings at Gwalior.

#### **Indore**

Organised webinar on the topic 'Sustainable Practices in Textile Industry' on 31 July 2021. Dr Nilesh Kanoongo, Director, Uttar Techno Consultancy deliberated lecture on the topic and explained optimum utilization of resources, implementation of Quality Management System, best practices in innovation, product design, development and advancement in manufacturing. Dr Shilpa Tripathi, Chairman, Indore Local Centre, IEI in her address spoke on how textile industries are one of the top contributors in pollution because of harmful dyes and other chemicals in wastage water coming out from industry.

#### **Jamshedpur**

Organised technical lecture on the topic 'Application of Solar Cell in IoT' on 23 July 2021 through virtual mode. Dr (Mrs) Shalini Kumari, Assistant Professor, RVS College of Engineering and Technology, Jamshedpur was the speaker of the webinar. During lecture she discussed about the applications of IoT in renewable energy production and its benefit for the industries.

#### **Kanpur**

Organised Lecture on Bacterial Cellulose and its Application in Medical Textiles' on 27 November, 2021 at Kanpur. Prof Mukesh Kumar Singh, Former Director and Dean, Academics, Uttar Pradesh Textile Technology Institute, Kanpur was the Guest Speaker of the event. He explained the significant attributes of bacterial cellulose, a natural nanostructure biopolymer network including its' purity, biodegradability, non-toxicity, three dimensional porous fibrillar structure, high water retention potential and so on. He also explained the promising future of bacterial cellulose for biomedical applications.

#### **Kanyakumari**

Organised webinar on the topic 'Overview of Electric Vehicle Charging Infrastructure' on 5 October 2021. Dr Sheik Mohammed S, Assistant Professor, Department of Electrical & Electronics Engineering, TKM College of Engineering, Kollam was the Keynote speaker on the occasion and explained the need of electric vehicles, development of infrastructure etc.

#### **Kharagpur**

Organised webinar on the topic 'Energetics of Walking in Old and Young Adults and Valorization of Scientific Knowledge through Start-ups in Europe' on 1 September 2021. Panellists of the session were Mr Sauvik Das Gupta, Erasmus Mundus Joint Directorate, Vrije Universiteit Amsterdam and KU Leuven, Belgium. Co-founder, Fitsurance BV, The Netherlands and Fitsurance India Private Limited; Mr Stef Beijck, Co-founder, Science and R&D Lead, Fitsurance; Mr Tommie Koppens, Co-founder & CEO Fitsurance and Mr Marcel van der Kuil, Data – Tech, Finance-Risk-Legal-IT, Sports-Health, Entrepreneur-Researcher.

#### **Madurai**

Organised Lecture Meeting on the topic 'Relationship between Technology, Society and Environment' through online mode, held on 14 August 2021. Dr Colonel P Nallathambi, Sakthi Consultancy Private Limited, Chennai was the Chief Guest of the lecture programme and delivered lecture on the theme. During deliberation, he explained briefly how the technology affects

human, natural resources and society. He explained that technology is the application of science, knowledge, methods and systems, which effects economic growth and change the human lives.

Organised Lecture meeting on the topic 'Vision and Legacy of Dr A P J Abdul Kalam' on 31 July 2021 through online mode. Chief Guest of the programme, Thiru A P J MJ Sheik Saleem, Managing Trustee of Dr A P J Abdul Kalam International Foundation, delivered lecture on the theme and strongly advocated for Green India concept.

#### **Pantnagar**

Organised Saturday Talk on 'Guidelines for Earthquake Resistant Building' on 3 July 2021 through online mode. Dr Virendra Kumar Verma, Honorary Secretary, Pantnagar Local Centre, IEI, delivered lecture on the topic and shared his views on the construction of building considering earthquake aspects.

Organised Saturday Talk on the topic 'Why and How Soil and Water Conservation : A General Perspective' on 10 July 2021 through online mode. Dr Akhilesh Kumar, Professor & Head, Soil and Water Conservation, Engineering College of Technology, G B Pant University of Agriculture & Technology, Pantnagar delivered lecture on the topic. In his lecture, Dr Kumar shared his views on soil and water conservation, impact of climate change on water resources, soil and water conservation strategies, how to save water and soil in future etc.

Organised Saturday Talk on the topic 'Energy Conservation, Energy Efficiency, Use of Renewable Energy, Environment, Climate Change, etc.' on 17 July 2021 through online mode. Lecture delivered by Mr K K Mahajan, Lead Auditor, Energy Auditor, Ex-Senior Executive, Tata Chemicals Limited, Gujarat. During the talk, he shared his views on energy conservation, energy efficiency, application of renewable energy, environment, climate change, etc.

#### **Tiruchirappalli**

Organised Lecture meeting on 31 August 2021 through virtual mode. Dr M Santhi, Professor and Head, Department of Electronics & Communication Engineering, Saranathan College of Engineering, Tiruchirappalli delivered lecture on the topic 'Image Processing Using Deep Learning Neural Networks'.

Organised Lecture meeting on 7 September 2021 through virtual mode. Dr X Susan, Principal, MAM College of Engineering & Technology, Tiruchirappalli delivered lecture on the topic 'Photonics Crystal – A New Frontier in Modern Optics'. As part of the presentation, he mentioned that the Photonics Crystal – A new frontier in modern optics of the engineering of electromagnetic modes at optical frequencies in artificial dielectric structures with periodic and random variation of the refractive index, enabling control of the radiative properties of the materials and photon localization.

#### **Tirunelveli**

Organised technical seminar on the topic 'Choosing Software Testing as your Career' through virtual mode on 12 October 2021. Mrs Sindhuja Sunil Kumar, Test Lead, Indium Software, Chennai was the speaker of the seminar and delivered lecture on the topic. During lecture, she explained the benefit and important of software testing and discussed various categories of software testing.

#### **Varanasi**

Organised technical webinar on the topic 'Electricity Amendment Bill 2021: Upcoming Transmission Policies and Business Models' on 26 September 2021. Speaker of the event, Mr Sanjeev Kumar Bhasker, Executive Engineer, Uttar Pradesh Power Transmission Corporation Limited, Lucknow deliberated lecture on the topic. During deliberation, he opined that as per the industrial and economic situation, the electricity regulations need to be modified.

## Obituary



Er P M Chako, Past President, IEI left for his heavenly abode on 24 November, 2021. Er P M Chako, a distinguished mechanical engineer, an acknowledged authority in design, manufacture and commissioning of plant and machinery was born on 18 February, 1929.

He maintained an outstanding scholastic record all over his career. He obtained his BSc degree from the University of Madras in 1948 and BSc (Engg) degree from the University of Travancore in 1952.

He had carried out many challenging duty assignments within India and abroad. He joined with the multinational organization, Harrisons & Crosfield Limited, Cochin in the year 1963 as Engineering Executive and became the first Indian to occupy the position of the In-charge of the company's engineering operations all over India. In 1978 he set up his own practice and has assisted in the establishment of many industrial units in different parts of India. He had tie-ups with world leaders in many fields in order to ensure adoption of latest appropriate technologies.

He was closely associated with the Institution for more than two decades having joined it as Associate Member in 1966 and became Fellow in 1977. He activated the functioning of the Cochin Local Centre. As Chairman of the Cochin Local Centre his services were laudable.

Ever since he entered the National Council of the IEI, he had been rendering his humble services for 11 years to the Institution by being on various Committees, namely Chairman & Co-chairman – Bye Law Committee; Chairman, Mechanical Engineering Division Board and Member, Finance Committee.

He had assumed Office as the President, IEI in 1994 and continued for two sessions 1994-95 & 1995-96.

He was one of the founder members of the Cochin Stock Exchange and also had served on its Board of Directors more than one term.

A multi-faceted personality and a keen sports lover, he was responsible for organizing various social service projects. He was actively associated with the establishment and running of several schools and colleges in the state of Kerala.

He was reputed for his perseverance and persistence in carrying out his mission – giving support to the technical triumvirate of engineering science, engineering technology and engineering practice. His election as President of the Institution was a momentous recognition of his distinguished attainments and underscores the Institution's commitment and continuing efforts to assume the highest level of technological excellence and professional competence in serving the nation.

## First Technical Activity by Disaster Awareness Management Forum, IEI

A mock drill on earthquake preparedness was organised on 8 December, 2021 by the District Disaster Management Authority, Srinagar, National Disaster Response Force (NDRF), State Disaster Response Force (SDRF), in collaboration with Disaster Awareness & Management Forum (DAMF), The Institution of Engineers (India) at Srinagar. Drones were also put into use for facilitating the Rescue Teams and for obtaining live video feed of the disaster affected sites.



## Superannuation from IEI



Mr Archan Basu, an employee of the Maharashtra State Centre of the Institution will be superannuated from the services of IEI on December 31, 2021. He joined the Institution on September 01, 1993 and rendered his services to the Institution over a period of 28 years.

IEI wishes Mr Archan Basu and his family a happy and healthy life in the future.

# I.E.I NEWS

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