



I.E.I NEWS

October 2021

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A CENTURY OF SERVICE TO THE NATION

Volume 28

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Council Elects New President of IEI



Dr Hemant Omkarrao Thakare, FIE, has been elected as the President of The Institution of Engineers (India) for the Session 2021-22 during the 710th Council Meeting of the Institution held on September 25, 2021 at Lucknow.

Dr Thakare is a Graduate in Civil Engineering and Post-graduate in Structural Engineering from Visvesvaraya National Institute of Technology, Nagpur and awarded Ph.D in Civil Engineering by RTM Nagpur University (RTMNU). He joined Yeshwantrao Chavan College of Engineering, Nagpur, a flagship Institute of Meghe Group of Institutions(MGI) in 1984 and was Professor of Civil Engineering & Executive Director (Technical).

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IEI Technical Webinar under the aegis of Chemical Engineering Division Board

Green Hydrogen-Imperative for Carbon Neutrality

Pune Local Centre of the Institution organized Technical Webinar on the theme **Green Hydrogen -Imperative for Carbon Neutrality** under the aegis of Chemical Engineering Division Board (CHDB) of the Institution on 03 September 2021 providing a comprehensive coverage of the topic bordering on the following facets of achieving carbon neutrality: Hydrogen generation involving renewable energy, low pressure hydrogen transportation and exploring use of bio-mass/bio-methane for generating hydrogen.



Dr Dilawar Singh

The panel of experts included Dr Dilawar Singh, Managing Director & CEO, Sun Brilliance Group, Australia; Dr Rajesh B Biniwale, Senior Principal Scientist, CSIR-NEERI (National Environmental Engineering Research Institute), Professor, Academy of Scientific and Innovative

Research & Director, Ecologique Science Technik (I) Private Limited and Prof (Dr) Ratnadip R Joshi, Former Associate Dean, Quality Assurance, MIT Pune and Faculty, School of Chemical Engineering, World Peace University, MIT Pune. The session was moderated by Dr Pramod M Deshpande, Senior Associate Professor, National Institute of Construction Management & Research (NICMAR), Pune.

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From the President's Desk.....



The Net Zero emissions refer to the situation where a country is able to remove at least the amount of CO₂ from the atmosphere as it is emitting. This can be obtained by increasing the forest cover or through the application of pertinent technology like carbon capture. Through the Net Zero target, a country commits to reduce its annual carbon and greenhouse gas emission to zero within a stipulated time frame and thereby ensure that any residual emission will be compensated by equivalent negative emissions by means of removal of CO₂ or other equivalent technology. Globally, India is the third-largest greenhouse gas emitter but with the lowest per capita emissions. As per the forecast by the climate action monitors and trackers, the implementation of net-zero target by different countries will maintain the global warming limit within a few degrees. Countries are formulating their strategy towards capping emission by submitting the National Determined Contribution (NDC) to United Nations Framework Convention on Climate Change (UNFCCC), as per the Paris Agreement, which is a landmark in the multilateral climate change process. The Paris Agreement brings all nations into a common platform to undertake ambitious efforts to combat climate change and adapt to its effects. In the NDCs, countries communicate the actions they will initiate to reduce their Greenhouse Gas emissions in order to reach the goals of the Paris Agreement. By means of NDCs, countries also communicate the actions they will take to build resilience to adapt to the impacts of rising temperature.

The objective of India's NDC is to achieve three principal goals, which include enhancement of cumulative electricity generation installed capacity from non-fossil sources of energy; lower the emissions intensity of its GDP, and create additional carbon sink through an increasing plantation of trees and forest cover. The NDC of our country also included the commitment to install renewable energy resources which comprises solar, wind, bio-energy, and hydropower projects.

As announced by UN-Habitat, World Habitat Day has been observed on 4 October 2021 on the theme 'Accelerating Urban Action for a Carbon-free World' by the State and

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5G – Road to Reality

West Bengal State Centre, IEI organized IEI Technical Webinar on the theme **5G – Road to Reality** on 27 August, 2021 under the aegis of Electronics & Telecommunication Engineering Division Board (ETDB), IEI. Mr Santosh Gupta, Program Manager, Middle-East & Africa Region, Ericsson and Mr Chanchal Chakraborty, Vice President (Technology), Reliance Jio graced the function as eminent Panelists. Mr Ram Chandra Chakraborty, Managing



Mr Santosh Gupta

Director, PSI Metals India Private Limited moderated the session. The Keynote speaker of the session, Prof (Dr) T S Kamal, Chairman, Electronics and Telecommunication Engineering Division Board, IEI in his address touched upon the significance of fifth generation mobile communication, its benefits & applications. Moderator of the session, Mr Ram Chandra Chakraborty briefed the audience about the theme and introduced the speakers.

Mr Chanchal Chakraborty, in his lecture narrated about the basics of 5G, and detailed about different service categories of the network grouped into the vertices of a triangle like eMBB (extreme Mobile Broad Band), mMTC



Mr Chanchal Chakraborty

(massive Machine Type Communication) and uRLLC (ultra-Reliable Low Latency Communication). The speaker, in his address, mentioned that 5G Network is about to connect everything in contrast to the earlier generation of network connectivity, that principally focuses on mobile broadband applications.

Mr Chakraborty elucidated further diversified applications of 5G technologies, which include 3D/UHD Telepresence, Tactile Internet, UHD Video

Streaming, Virtual & Augmented Reality, Smart Cities, Smart Homes, Utility Metering, Smart Wearables, Remote Sensors/Actuators, Object Tracking, 3D Hologram Meeting, Automated Car Driving, Remote Surgery, e-Learning and so on.



Mr Ram Chandra Chakraborty

In his presentation, Mr Chakraborty represented 5G as an innovation engine which caters to 10 Gbps peak data rate, 100 Mbps everywhere within the cell, 10X to 100X data volume, 1 ms Latency, which refers to the time taken by the data pack to get from one designated point to another and come back to the source; 10 years of battery lifetime for IoT devices operating in remote areas and 10X to 100X devices compared to 4G network.

He further explained about the technology components behind the 5G services like Millimeter Wave, Massive MIMO (Multiple Input Multiple Output), Small cell, Beam forming, Mobile Edge Computing, Network Function Virtualization (NFV), Network Slicing backed by Artificial Intelligence Analytics. He further stated that massive Multiple Input Multiple Output (MIMO) Beam forming can increase spectral efficiency and network coverage substantially.

He further explained that, Beam forming is more practical at higher frequencies because the antenna size is comparable to the wavelength, and becomes smaller at higher frequencies. In practice, massive MIMO beam forming can be utilized at frequencies above 1 GHz in the base stations and even at Millimeter wave in the devices. Massive MIMO will be the part of 5G specifications and deployments from day one, the speaker opined. Network

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Council Elects New President of IEI

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Dr Thakare is actively associated with The Institution of Engineers (India), since eighties. He was the Honorary Secretary of Nagpur Local Centre for two terms, Past Chairman of Maharashtra State Centre and Nagpur Local Centre. He was the Governing Council Member of Indian Concrete Institute for 1999- 2001 and Council Member from Civil Engineering Division of The Institution of Engineers (India) for four terms. He is also Life Member of Indian Society for Technical Education, Indian Water Works Association, Indian Geotechnical Society, Indian Society of Earthquake Technology and Indian Hydraulic Society. He was the Organising Secretary for 12th Indian Engineering Congress held at Nagpur.

Dr Thakare is associated with various social, educational, sports and cultural organizations in and around Nagpur and was the President of Amateur Boxing Association of Nagpur District. He has the distinction of being the youngest Executive Councilor of Nagpur University at the age of 27, youngest Chairman, Board of Physical Education and Recreation, Nagpur University at the age of 30, youngest Dean, Faculty of Engineering and Technology, Nagpur University at the age of 32 and youngest Council Member of The Institution of Engineers (India) at the age of 34, youngest Vice President of The Institution of Engineers (India) at the age of 43 years and youngest Chairman of Maharashtra State Centre. He is on Governing Bodies of all Technical Institutions of MGI and was on Governing Body of Government Polytechnic, an autonomous Polytechnic of Government of Maharashtra as well as Laxminarayan Institute of Technology, a conducted College of RTMNU. He is also the Founder Director of Tirupati Urban Co-operative Bank, Nagpur — one of the leading Co-operative Banks in the region.

He has over 35 years of rich experience in Engineering, Social and Educational field and is currently working with Ceinsys Tech Limited (CTL) as the Director and Chief Operating Officer (COO). Prior to being appointed as Director and COO, he served as President & Business Unit Head for the Education software solutions business.

Dr Hemant Thakare is a dedicated soldier of IEI for more than 35 years having a long, distinguished innings with selfless service and total devotion. He has exposure to all the thick and thin that IEI has experienced over last four decades. He has served with an unblemished record of representing almost all the Bodies/ Fora of IEI, which include AISC, EEAC, EQC, JMC, BYC, SHMC, CATE, MC, EC, SPC, BOM-ESCI, BOM-RDF, BOG-SQF, BOG-SDF, BOG-NDRF, BOG-NSDF, ICC, FC, CVDB, IMC-fib, IMC-WFEO to name a few.

He was the part of International delegation from IEI, during the World Engineering Summit on 'Climate Change', held on July 21 - 24, 2015 at Singapore; As the Chairman, Civil Engineering Division Board, IEI, he had attended ASCE Conference 2017, held during Oct 08-11, 2017 at New Orleans, Los Angeles, USA and ASCE Convention 2018, held during 12- 15 Oct 2018 at Denver, Colorado, USA,

During his tenure at both Nagpur Local Centre and Maharashtra State Centre, Dr Hemant led by example and was instrumental in undertaking massive infrastructural developmental projects which are testimony till date and showcase his leadership skills and vision for the future. Dr Hemant has been a crusader for excellence and performance which is the need of the hour in this critical time that IEI is passing through. His skills, exposure, networking, deep understanding and total commitment shall be the most desired credentials to lead IEI in its challenging times.

Electric Vehicles: The Future of Energy and Mobility for Sustainable Development

Faridabad Local Centre, IEI organized Technical Webinar on the theme **Electric Vehicles: The Future of Energy and Mobility for Sustainable Development** on 28 August 2021 under the aegis of Electrical Engineering Division Board (ELDB), IEI. Panelists during the webinar session, Mr Dinesh Aggarwal, Joint Managing Director, Panasonic Life Solutions India Private Limited & Head – New Business (ISAMEA Region), Dr Ashish Grover, Assistant Professor, Department of Electrical & Electronics Engineering, Faculty of Engineering & Technology, MRIIRS, Faridabad, Mr R P Deshpande, Adjunct Faculty, M I T Aurangabad & Consultant for Capacitors & Energy Management and Ms Sonakshi, Director, Technopan Industries, Faridabad delivered lectures and shared their thoughts with the august audience. Mr Pradeep Mallah, CEO, Technopan Industries, Faridabad moderated the session.



Mr Dinesh Aggarwal

Mr Narendra Singh, President, IEI in his address, welcomed the Panelists and Moderator and stated that the effort of the Institution has always been to keep its members informed and abreast about the latest engineering and technological developments occurring in national and international arena through conducting technical events involving eminent professionals and practitioners. In his welcome address, he stated that according to the experts, within the next few decades, we will run out of one of the most important natural resource i.e. oil, which forms the base of transportation system in the world and the electric cars are able to reduce the use of natural resources like petrol, diesel, Compressed Natural Gas (CNG), etc. to a great extent. Mr P Rajamani, Chairman, Electrical Engineering Division Board, IEI in his address stated that with restrictions in place, these webinars conducted by the Institution on topical issues have provided a virtual knowledge sharing platform for our members and many other professionals attached to the trade. Moderator of the session, Mr Pradeep Mallah briefed on the theme of the webinar and introduced the speakers.

Mr Sandeep Handa, Chairman, Faridabad Local Centre, IEI in his opening address stated that by the year 2050, about 70% of the world's population will live, commute and work in urban areas. Between now and then, cities and suburbs will undergo significant transformations to create sustainable living conditions for their residents; Mobility and energy are the twin pillars of these transformations, and both will require radical adaptation to meet demographic and economic growth without increasing congestion and pollution; Cities will require mobility and energy solutions that are sustainable, affordable, secure and inclusive, and integrated with customer-centric infrastructure and services, he added.

Mr Dinesh Aggarwal, Joint Managing Director, Panasonic Life Solutions India Private Limited & Head – New Business (ISAMEA Region) deliberated on the topic Electric Vehicle Chargers: The Journey Ahead. Mr Aggarwal explained in detail different charging modes of electric vehicles. In his lecture, Mr Aggarwal explained the application of International Standard on Electric Vehicle Conductive Charging System, IEC 61851, that deals with electric vehicle conductive charging systems and further discussed on four different electric vehicle charging modes. The first three modes deliver AC current to the EV on-board charger; however, the fourth mode delivers DC current directly to the battery and bypasses the on-board charger; The third mode employs several control and protection functions with the goal of public safety, he added. He further stated that Electric Vehicle Smart Charging provides significant benefits to the EV charging ecosystem as a whole – from the utility to individual EV drivers, which optimizes and stabilizes energy flow within a balanced grid while ensuring more reliable service and quality power.

Dr Ashish Grover, Assistant Professor, Department of Electrical & Electronics Engineering, Faculty of Engineering & Technology, Manav Rachna International Institute of Research and Studies (MRIIRS), Faridabad deliberated her presentation on the topic Energy Management in Electric Vehicles and

emphasized on the development of strong Research and Development (R&D) capacity, which leads to the commercialization in electric vehicle ecosystems and thus helps to achieve self reliance. Rolling out incentives to the consumers for purchasing electric vehicles as well as to the manufacturers/traders in the



Dr Ashish Grover

form of tax benefit/tax discount is the need of the hour, she felt. Dr Grover, in her lecture, further stressed on rapid development of charging infrastructure and advocated for installation of charging stations on street parking, parking lots and public space. She mentioned that the Energy Management model is able to bring together, young and talented startups as well as different manufacturing companies and the Corporate Social Responsibility (CSR) could be put in place. Dr Grover highlighted the fact that to evolve electric mobility space around the world, startups will play the pivotal role and opined that Corporate Social Responsibility (CSR) funding be initiated through Public Sector Undertaking's (PSUs) and corporate houses to boost the startups involved in EV industry.

Mr R P Deshpande, Adjunct Faculty, Marathwada Institute of Technology (MIT) Aurangabad & Consultant for Capacitors & Energy Management deliberated on the topic Electric Vehicles and Environment. During his deliberation, Mr Deshpande explained the derived benefits of electric vehicles, which include zero tailpipe emissions, fewer particulates, energy efficiency, low carbon footprint, curtailing noise pollution, night charging, etc. that leads to cleaner energy. He also discussed different aspects of National Hydrogen Mission (NHM) initiative by the Government of India, that enable generation



Mr R P Deshpande

of hydrogen from green power sources to ensure environmental security and mentioned hydrogen as quite attractive alternative for controlling emissions. Wherever hydrogen replaces fossil fuels, it slows global warming and apart from transportation, it can act as a decarbonizing agent for industries like chemicals, iron, steel, fertilizer and refining, transport, heat and power, the speaker added.

Ms Sonakshi, Director, Technopan Industries, Faridabad in her deliberation explained about the derived benefits of Electric Vehicles over the vehicles operated by Internal Combustion Engine by means of cost effectiveness, improved air quality and convenience to use. She also stated that electric vehicles are much more efficient than fossil fuel vehicles and have few direct emissions with less pollution. She further discussed on the energy input of electric vehicles, which essentially is a combination of non fossil fuel plants and fossil fuel plants.



Ms Sonakshi

Moderator of the webinar session, Mr Pradeep Mallah, CEO, Technopan Industries, Faridabad while summing up the deliberations, stated that the objective of the Webinar is to focus on the expansion of global electric vehicle market size, which is projected to grow from 4,093 thousand units in 2021 to 34,756 thousand units by 2030, at a Compound Annual Growth Rate (CAGR) of 26.8%. Mr Mallah briefed that India has already shown its keen interest to be a major part of this automotive paradigm shift and has already put forward the desire to become the biggest hub for electric vehicles in the future. Moreover, industry leaders consider manufacturing of electric cars as a promising option for revenue generation and protect the environment, Mr Mallah added.



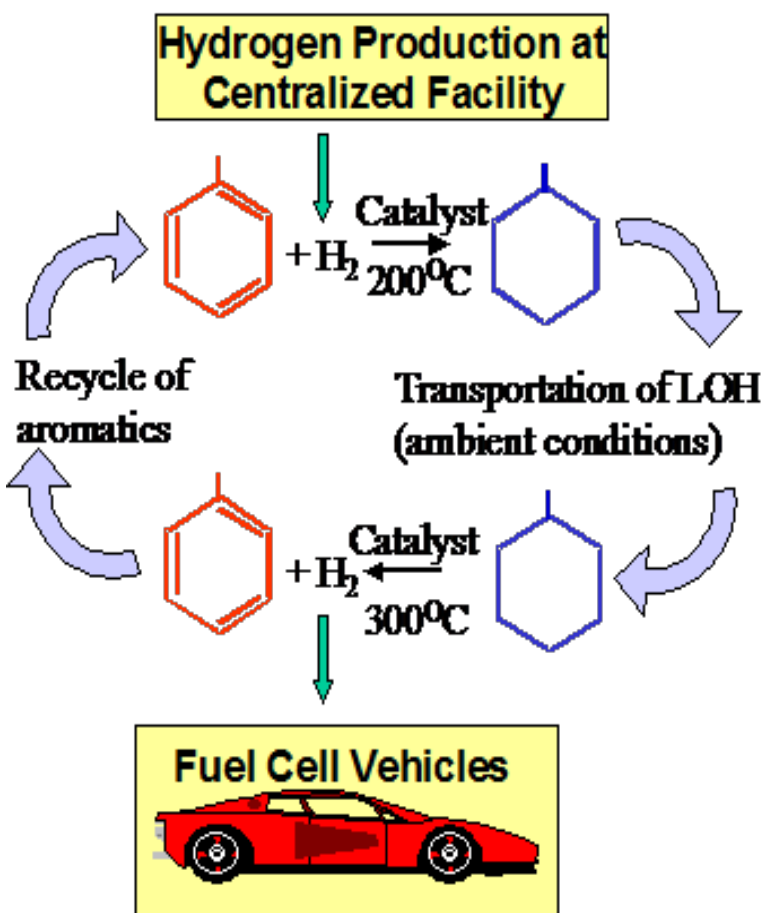
Mr Pradeep Mallah

An interactive question-answer session was held at the end of the session. Mr Kuldip Raj Gupta, Honorary Secretary, Faridabad Local Centre proposed the vote of thanks.

Green Hydrogen-Imperative for Carbon Neutrality

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The webinar commenced with a welcome address and thereafter, Dr Deshpande; Moderator introduced the Panel Members and the theme of webinar. He spoke about the contextuality of the topic in the present scenario and the need to move away from fossil fuels to green energy in order to achieve a decarbonized ecosystem as well as fulfill our climate objectives.



The proceedings commenced with a presentation from Dr Dilawar Singh; he explained the significance of hydrogen as fuel and how it can facilitate the transition to a carbon neutral economy. In his discussion he explained how hydrogen can be produced from diverse domestic resources with the potential to obtain near-zero greenhouse gas emissions. He also explained the 'Power to Power' concept of green hydrogen i.e., generating the power from renewable energy. He went on to mention that though the capital cost involved is high, the operating cost of power reduces drastically. This might



Dr Rajesh B Biniwale

come as a respite for our thermal power plants which runs on a substantially high operating cost, added Dr Singh. He touched upon the various facets of sustainability- use of wind and solar (hybrid) power for generation of hydrogen in an electrolysis unit; hydrogen generation for ammonia production etc. at length. Dr Singh, in his deliberation, put special emphasis on water electrolysis, terming it as one of the most promising alternatives to store energy from renewable energy resources and mentioned that Polymer Electrolyte Membrane (PEM) water electrolysis provides a sustainable solution for the future clean production of high purity hydrogen. Dr Singh was followed by Dr Rajesh B Biniwale, who spoke on transportation of hydrogen under low pressure and spoke on the technological aspects and challenges of efficient hydrogen Storage and supply system.

Dr Biniwale informed that hydrogen is being looked upon as a future fuel for automotive applications in internal combustion engines and in fuel cells. Speaking on the interrelation, he mentioned that hydrogen-fuelled vehicles are able to use fuel cell, which can provide much higher energy conversion efficiency compared to internal combustion engines with zero tail pipe emissions. This possibility has led to enormous development in the field of fuel cells and the technology has matured to a great extent, added Dr Biniwale notwithstanding the fact that storage and supply of COx free hydrogen for efficient operation of fuel cells still remains a challenge. While discussing some of his works, Dr Biniwale spoke on a novel approach for supply of hydrogen through liquid organic hydrides (LOH) using catalytic reaction pair of dehydrogenation of cycloalkanes such as methylcyclohexane, cyclohexane and decalin; and hydrogenation of corresponding aromatics for supply of hydrogen to PEMFC. This, apart from being one of the most promising methods to store, transport and supply of in-situ generation of hydrogen, additionally possess the advantages like COx free hydrogen at fuelling stations, reversible catalytic reactions, recyclable reactants and products and relatively high hydrogen contents (6–8 wt.% and >60kg/m³). Due to high boiling points of cycloalkanes, the present infrastructure such



Dr Ratnadip R Joshi

as oil tankers and tank lorries can be used for the long-term storage and long-distance transportation of hydrogen in the form of LOH. Particularly, the approach is most useful to transport the hydrogen from centralized generation facilities to fuelling stations. The recent results show high selectivity and stability for some noble metal and non-noble metal based catalysts for dehydrogenation reaction. Hydrogen produced at centralized production facility is used for hydrogenation of toluene and product methylcyclohexane is transported to a fuelling station. At the fuelling station a subsequent dehydrogenation reaction supplies hydrogen to fuel cell vehicles and recycles back the toluene to the hydrogen production facility. Dr Biniwale mentioned that the research group at CSIR-NEERI has developed the technology for dehydrogenation at bench scale and is being up scaled to pilot scale @1Nm³/h and 100 Nm³/h of hydrogen for telecom tower and hydrogen fuelling station applications respectively. This has already been granted US and European patents apart from Indian patent. Dr Ratnadip R Joshi, the last of the three speakers, shared his views and works on use of biomass for hydrogen generation with special emphasis on e-Hydrogen generation by biomass and its affordability. He discussed the use of Hydrogen in a fuel cell, various



Dr Pramod M Deshpande

sources of generation of bio gas methane and its usage in cars, houses, portable power units, and in various industrial applications. Dr Joshi mentioned that hydrogen is an energy carrier that can be used to store, move, and deliver energy produced from other sources. He spoke on the various routes of production of hydrogen fuel ranging from most common methods like natural gas reforming (a thermal process), and electrolysis to other methods involving solar-driven and biological processes. Dr Joshi also discussed a plant design case study involving a successful research application on hydrogen generation from bio-methanation.

The webinar was attended by close to three hundred virtual attendees who were professionally enriched with the insights shared by the renowned Panelists. The webinar ended with a formal vote of thanks by Prof K K Ghosh, Chairman, Pune Local Centre and Council Member, IEI.

Driving Business Performance and Growth through Data Driven Decision Making

Jharkhand State Centre, IEI organized IEI Technical Webinar on the theme **Driving Business Performance and Growth through Data Driven Decision Making** under the aegis of Production Engineering Division Board (PRDB), IEI on 25 July, 2021. During the session, Mr Reyaz Ahmed, Director, Programme Management Services, Global Design Center, W S Atkins, Bangalore; and Mr Athar Sayyad, Delivery Manager, Programme Management Services, Global Design Center, W S Atkins, Bangalore; deliberated presentations as eminent Panelists. The Session was moderated by Mr Mohammad Parwez, IT Manager, Herbalife Nutrition, NC, USA.

The programme was started with the welcome address delivered by Mr Shiyaranjan Kumar Singh, Chairman, Jharkhand State Centre and Council Member, IEI. Mr Reyaz Ahmed started his presentation with a brief overview on the significance, scope and applications of data driven decision making systems and explained the application of program management services in data driven decision making systems. Mr Ahmed highlighted the fact that decision making with required degree of accuracy is rather a complex task, when the critical leadership skills and the demands and challenges

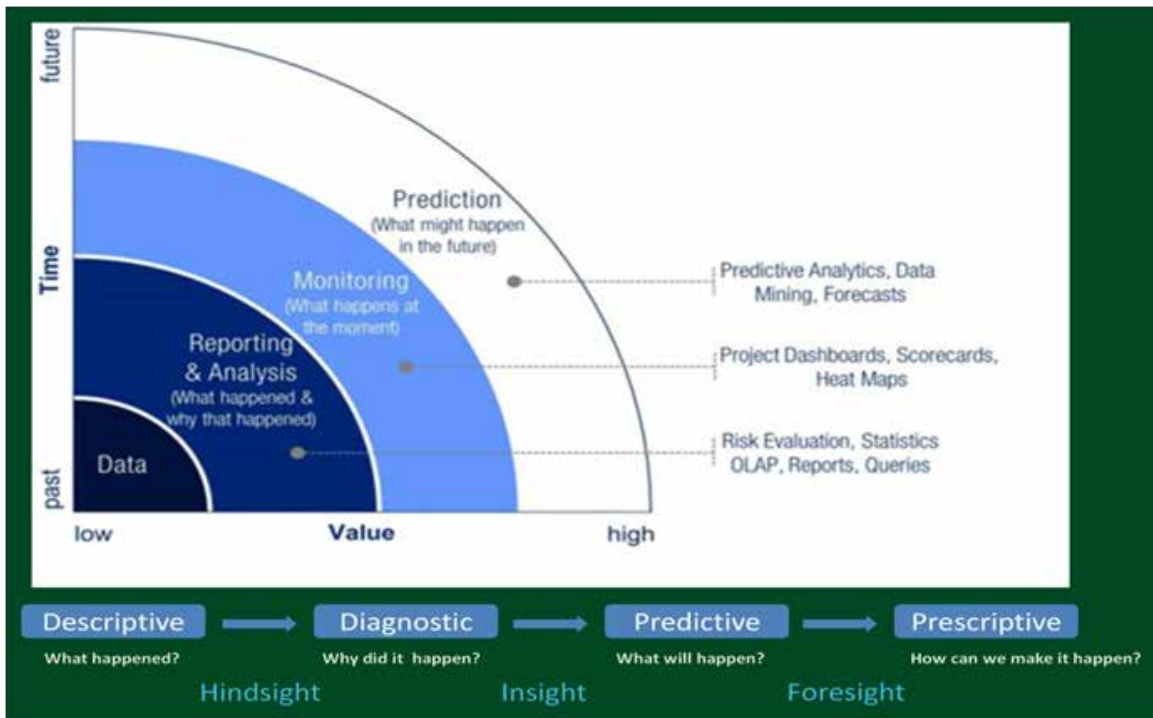
of diagnostic analysis; This leads to predictive analytics with different data mining models, forecasts and algorithms.

He further emphasized on data examination and organization based on the organizational goal. Mr Ahmed discussed at a length the seven – step



Mr Athar Sayyad

decision making process, namely, coherence with the shared vision as represented in the strategy map; making the decisions more tangible and specific by identification of key process indicators (KPAs); application of performance data for leading and lagging indications; constitution of prioritization framework with KPT as the basis of discussion and improvement; analysis of the deep reasons for success and failure and improvement of communication infrastructure and internal mechanics. He highlighted the derived benefits of data driven decision making process as improved productivity, higher efficiency and standardized procedure. Mr Ahmed further deliberated on data driven culture, which comprises a set of norms on decision making



towards decision making are the major driving forces. He further discussed different strategic decision making processes, namely big – bet decision, i.e. merging and acquisition; cross cutting decisions, i.e. pricing decisions; delegated decisions, ad-hoc decisions etc. He discussed the associated challenges for quick decision making process and added that the transparency and time management in decision making process identify and differentiate the leadership in the organization. He emphasized on established procedure and norms, which are able to bring a transparent process or system in proper order, that facilitate to take decisions in time. He stated that transparent decision making within compressed time frame leads to evidence based decision making,



Mr Reyaz Ahmed

where the organizational processes are measurable and decisions are made with data rather than intuition or personal experience. The speaker also deliberated on the applications and functions of data driven decision making in different sectors and discussed on the data driven decision making matrix as shown in the figure, where data is represented as a basic value, which is further explored by means of reporting, monitoring as a part

and the traditional approach of data analysis and reporting, which include



Mr Mohammad Parwez

application of multiple data sources, disconnected data base, repetitive work in manual mode and typical manpower dependent discrete data management systems. Mr Sayyad, in his lecture focused on the case studies of data driven decision making systems with real time data input. The speaker highlighted the fact that in the new regime of data management system, number of automated tools are used for data analytics and make it ready for the next stage

of processing. Moreover, the advanced analytic tools make data available and accessible in the defined domains and for multidimensional analytics, data inputs from different departments and its subsequent analysis results huge potential with purposeful insights that facilitate business operations in a more effective manner. He further explained the applications of advanced analytics and reporting and deliberated at a length different steps to develop dash boards based on customer requirement and available data input. Mr

to justify logically all the associated actions with facts, figures, models, algorithms etc. He mentioned that a data driven business is a collective effort, which requires shift in mindset and initiatives & support from leaderships and workforce. He felt that orchestrating change in organizational culture and its subsequent implementation requires executive advocacy, agility, data proficiency and a skilled workforce that ensure fulfillment of the organizational goal in terms of data accessibility, process flexibility, consistency and technological interpretations. The speaker concluded his lecture highlighting the major pillars of data driven culture, which include data literacy, experience, organizational capabilities, data driven business and data architecture.

Mr Athar Sayyad started his lecture with introduction to data analytics

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5G – Road to Reality

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slicing will create virtual network segments for different services within the same 5G network. He mentioned that this slicing capability allows operators to support different applications and enterprise customers without any dedicated network.

Mr Chakraborty, in his address mentioned that Mobile Edge Computing (MEC) brings cloud computing and services to the edge which are closer and physically local to the user. He stated that Intensive and latency sensitive applications like Augmented Reality and video conferencing can be hosted at the edge of the network. The current architecture in Long Term Evolution (LTE) networks is fully distributed in the radio and fully centralized in the core network; The low latency requires the content to be brought close to the radio, which leads to local breakout and edge computing; 5G radio and core networks are specified for native cloud implementation, including new interfaces inside the radio network; the speaker added. He further depicted the Non Stand Alone (NSA) Network Architecture, discussed the coexistence of Long Term Evolution (LTE) technology for 4G & new technology for 5G and mentioned that the stand alone modes are quite frequent for 5G Network.

Mr Santosh Gupta, in his lecture explained about the utilization of Spectrum, 5G deployment phases adopted by operators with a migration path from existing LTE to 5G, and the concept of open Random Access Networks

(RANs) Architecture & Dynamic Spectrum Sharing (DSS). Mr Gupta mentioned that Low Frequency Division Duplex (FDD) bands are needed for wide area rural coverage, ultra-high reliability, and deep indoor penetration. Mr Gupta opined that extensive coverage is important for the emerging domain like IoT and critical communication. He further discussed about FR1 and FR2 frequency ranges which will be used in 5G system and added that Spectrum reframing from LTE to 5G will be simpler with Dynamic Spectrum Sharing (DSS). Mr Gupta explained that 5G and LTE can occupy the same spectrum band from the control channel point of view, and the resources are allocated dynamically between the two technologies depending on the instantaneous device distribution and capacity needs. At the end of the deliberation, during the interactive session, speakers responded to the queries from the audience. Moderator of the Session, Mr Ram Chandra Chakraborty, Managing Director, PSI Metals India Private Limited while summed up the Proceedings of the session mentioned the advancement of the nation towards transformation from 4G to 5G mobile communication once commercial allotment of spectrum is over.

Earlier, Mr Sugata Bandyopadhyay, Chairman, Electronics & Telecommunication Engineering Divisional Sub-committee, West Bengal State Centre, IEI delivered the introductory remarks. Prof Nitosh Kumar Brahma, Honorary Secretary, West Bengal State Centre, IEI extended vote of thanks at the end of the session.

Driving Business Performance and Growth through Data Driven Decision Making

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Sayed highlighted the applications of different data analytics tools, namely Tableau, Qlik Sense, Thought Spot, Power BI, Looker, Sisense, Oracle Analytics Cloud etc. He further demonstrated application of data analytics and dash boards, the visuals with facts and figures, based on which the business analysts determine the requirement of the organization and accordingly prepare the strategy. He mentioned data security, data integrity and data validity as the inherent properties of dash boards, that represents the credentials of the organization at a glance. The speaker further highlighted the applications of data input and its interpretation in the dash board through different case studies, which include Quality and Compliance management, Program Control Management etc, and discussed on the applications of workflow diagnostic dash board, with real time data input, Row - level security and Auto-refresh data feed facility.

An interactive session was organized at the end of the session, when the Panelists and Moderator of the session interacted with the attendees and

enumerated on different factors related to data frequency, data quality, application of data analytics tools and statistical methods, change management prospects, identification of key results areas, importance of training and skilling manpower and strengthening the IT system of the organization. During the question-answer session, development of framework to prepare dash boards with real time data and how to maintain the same, data outliers, data values, career prospects in the field of data management and data science were also discussed at a length.

Moderator of the webinar session, Mr Mohammad Parwez, IT Manager, Herbalife Nutrition, NC, USA while summed up the Proceedings of deliberation, stressed on the importance and scope of training and development in data management and data analytics.

The programme was well attended by the professionals, academicians and students from different corners of the country. Mr Jitendra Kumar, Honorary Secretary, Jharkhand State Centre, IEI proposed the vote of thanks.

From the President's Desk.....

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Local Centres of IEI. The principal focus of observing this day is to stimulate more sustainable, low carbon, and resilient development pathways, while recovering from COVID 19 crisis. The Institution of Engineers (India) is committed to supplement the effort by the Government in reducing the foot print and regularly organizes technical seminars / talks based on this issue.

I also take this opportunity to inform all members that IEI Council has elected Dr Hemant O Thakare as the President of IEI for the session 2021-22. I congratulate Dr Thakare and I am sanguine that he will endeavour to strengthen the engineering and technological advancement of the country through the diversified IEI platform and help the Institution to sustain the global recognition it deserves.

Jai Hind

Exploration, Upgradation and Extraction of Lithium from Rocks, Tailings and Used Batteries

Odisha State Centre of the Institution organized Technical Webinar on the theme **Exploration, Upgradation and Extraction of Lithium from Rocks, Tailings and Used Batteries** under the aegis of Chemical Engineering Division Board (CHDB), IEI on 05 August 2021. The webinar benefitted hundreds of virtual attendees who received professional exposure while listening to the eminent Panelists hailing from the CSIR Labs, namely, Dr Abhilash, Principal Scientist, CSIR - National Metallurgical Laboratory, Jamshedpur and Dr Shivakumar I Angadi, Principal Scientist, Mineral Processing Department, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar. The webinar commenced with a welcome address from Prof (Dr) Khiroda Kumar Rout, Chairman, Odisha State Centre & Council Member, IEI. The proceedings commenced with a presentation from Dr Abhilash, who spoke on the topic 'Achieving Sustainability in Lithium Supply Chain via Spent Battery Recycling - Indigenous Developments and New Opportunities'. The presentation focused on critical metal scenario in India, and broadening the opinion on lithium scenario and its criticality vis-à-vis supply chain. It also assessed the merits and demerits



Dr Abhilash

for extraction of lithium from among primary and secondary resources. Adding on the virtues for practicing LIB recycling, he presented on the new opportunities in replenishment of lithium and other critical metals from such urban reserves, and the future directions.

Dr Abhilash mentioned that the global demand of critical metals is governed by three major drivers, i.e. growing population, especially in Asia, growing wealth, technology development and performance and also added that based on the report on critical metals for India made by CEEW and DST in 2016, lithium falls in the zone of low economic importance and high supply risk (moderately critical). The essence of his entire presentation may be summarized in



Dr Shivakumar I Angadi

terms of the following statistical data which states that although India doesn't have any reserves of lithium and many of the critical elements, India has set a target of having 30% EV penetration by 2030. Lithium as per the report on critical metals for India made by CEEW and DST in 2016, projects 5.44% CAGR in chemicals and 6.98% CAGR in transport and mobility. In 2020, 57.3% global lithium demand was for LIBs, of which 65% was for EVs. Global lithium-ion battery market size is estimated to grow from USD 44.2 billion in 2020 to USD 94.4 billion by 2025; it is expected to grow at a CAGR of 16.4%. On comparing the merits and demerits of using ores and spent lithium batteries, it was assessed that for every one ton of lithium, approximately 250 tons of spodumene or 750 tons of brine is required as against 28 tons of portable batteries. On the environmental aspect, it can be assessed that the CO₂ emission during recycling process to produce one-ton lithium is 1/10th of the mining-cum-refining operations. Keeping this view and the India's ambitious plan of indigenous LIB manufacturing at 50GWH capacity in 2030, CSIR-NML has developed comprehensive flow sheets to extract lithium and other critical metals/materials from mixed chemistries of spent/used lithium batteries. The scarcity of lithium and critical metals are well

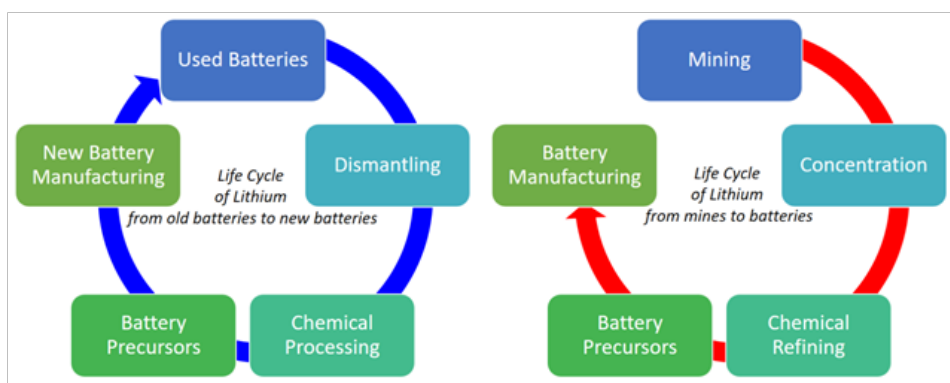
realized, but conserving the resources and having a reality check of primary and secondary resources with good understating of change in materials flow over time is very important. There is lot of lithium in secondaries still unexplored and the efforts should continue.

Dr Abhilash was followed by Dr Shivakumar Angadi who spoke on 'Characterization and Beneficiation of Lithium Bearing Minerals from Indian Resources'. He started off with a brief physical description, availability/deposits and areas of application of Lithium. The discourse was an attempt to provide an overall idea about the Lithium which may be summarized as- Lithium is a silvery-white alkali metal, soft and light in nature; it has many unique physical and chemical properties and thus finds wide applications in the manufacture of batteries, ceramics, glass, optical and air-conditioning industries, etc; generally occurs in pegmatite deposits, brines, seawater and the most common lithium-bearing minerals of economic importance are Spodumene, Lepidolite, and Petalite. He also mentioned that Spodumene is predominantly mined as a lithium mineral due to its high Li₂O content of 8.03%. A typical run of mine ore usually consists of 1-2% Li₂O, while a typical Spodumene concentrate suitable for lithium carbonate production comprises 4.5-7% Li₂O.



Dr Raghupatruni Bhima Rao

While speaking on the recovery aspect, Dr Shivakumar Angadi informed that the recovery of strategic minerals is not practiced in India since most of these metals were imported from other countries for domestic consumption. Dr Angadi while emphasizing the need for recovery mentioned that recently world market prices for these metals have increased, and with many countries stopping export, we need to develop technologies for creating the indigenous reserves. He went on to add that the low-grade Indian ores are associated with varieties of gangue minerals which



Life Cycle of Lithium in Primary and Secondary Material Processing

have a lot of adverse impacts on the processing since these ores are non-responsive to the conventional beneficiation process. While stressing on the necessity to develop process flow sheets for the low-grade ores, Dr Angadi shared the work carried out by CSIR-IMMT, Bhubaneswar involving characterization and beneficiation studies on lithium-bearing minerals from Amareshwar pegmatite deposit, Raichur district, Karnataka. He mentioned that the samples, when subjected to various characterization studies, revealed that the feed material consists of spodumene, quartz, plagioclase, K-feldspar, muscovite, garnet minerals and the chemical analysis of the collected samples reveal 0.1 – 1.8% Li₂O content while the beneficiation studies carried out reveal that the lithium content in the concentrate has been enriched to 5.4% Li₂O. Dr Angadi further went on to mention that the beneficiation concentrate was used for the production of lithium carbonate through pyro- and hydro-metallurgical routes.

The moderation of the event was obtained by Dr Raghupatruni Bhima Rao, Former Chief Scientist, CSIR-Institute of Minerals and Materials Technology, Bhubaneswar who is presently the Committee Member, Chemical Engineering Division of the Odisha State Centre. The webinar ended with a formal vote of thanks by Prof (Dr) Sudhansu Sekhar Dash, Honorary Secretary, Odisha State Centre, IEI.

IEI Celebrates

54th Engineers' Day

Engineers for Skill Development & Employment in Combating COVID

The 54th Engineers' Day was celebrated by the Institution all over the country on September 15, 2021 to commemorate the 161st 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

Gujarat

Gujarat State Centre, IEI, jointly with L D College of Engineering, Ahmedabad and Water Management Forum, IEI observed 54th Engineers' Day at Ahmedabad and organised webinar on the theme of the day on 15 September 2021. Mr Navinchandra B Vasoya, Past President & Council Member, IEI and Member, Executive Council, World Federation of Engineering Organization (WFEO) graced the function as Chief Guest and delivered lecture on the occasion. Guest of Honours, Dr Rajul K Gajjar, Principal, L D College of Engineering, Ahmedabad and Mr B S Patel, Chairman, Computer Engineering Division Board, IEI addressed the audience and explained the importance of observing Engineers' Day. Prof (Dr) Ing. Anupam Kumar Singh, Director, IITE, Indus University, Ahmedabad also joined online and delivered presentation. Mr Dharmendra Joshi, L D College of Engineering, Ahmedabad & Life Skills Trainer delivered presentation on the topic 'Good Passion & Skill Development'. Cap. Major Dr C S Sanghvi, Professor & HoD, Applied Mechanics Department, L D College of Engineering Ahmedabad gave the concluding remarks on this occasion. Earlier, Mr Hiro Udhavdas Kalyani, Chairman, Gujarat State Centre and Council Member, IEI delivered the opening remarks. At the end of the session, Mr Shyam Varghese, Honorary Secretary, Gujarat State Centre, IEI proposed the vote of thanks.

Madhya Pradesh

Madhya Pradesh State Centre, IEI in association with KEI Wires & Cables observed 54th Engineers' Day on 21 September 2021 on the theme of the day at Bhopal. On the occasion, Chief Guest of the event, Mr K K Songaria, Engineer-in-Chief, Public Health Engineering Department, Government of Madhya Pradesh in his address elaborated about the role of engineering in fighting COVID pandemic. Mr Pramod Joshi, Former General Manager, MSME Tool-Room and CEO, Ved Industries was the Guest of Honour. During lecture, he informed about the behavioural pattern of people and improvement in behaviour and attitude during fighting COVID. Earlier, Mr Ranbir Singh Yadav, Chairman, Madhya Pradesh State Centre and Council Member, IEI briefed the audience about the theme. Mr Avinash Chandra, Honorary Secretary, Madhya Pradesh State Centre, IEI delivered the welcome address.

Manipur

Manipur State Centre, IEI observed 54th Engineers' Day on 15 September 2021 through hybrid mode and organised a technical talk on the theme. Speaker, Mr L Niranjan Singh, Director and CEO, JCRE Skill Solutions enlightened the audience by deliberating on the importance of skill development for the emerging youths. Earlier, welcome address was delivered by Mr Achom Roudrajit Moirang, Honorary Secretary, Manipur State Centre, IEI. Past Chairmen, Past Honorary Secretaries and Corporate Members were present on the occasion. Mr Thangjam Joykumar Singh, Chairman, Manipur State Centre, IEI and Mr M Lokendro Singh, Past Chairman, Manipur State Centre also addressed the august gathering.

Punjab & Chandigarh

Punjab & Chandigarh State Centre, IEI in association with Chandigarh University observed 54th Engineers' Day on 15 September 2021 through online mode. Chief Guest, Dr Harjot S Gill, Associate Director, Engineering, Chandigarh University stated that that present workforce should be empowered with the right skills through timely and relevant skilling, upskilling and re-skilling efforts. He further advocated for more agility and resilience of the engineering community to meet the challenges posed by the pandemic. Keynote Speaker of the event, Prof (Dr) Anuj Kumar Sehgal, HoD, Mechanical Engineering Department, Chandigarh University delivered presentation on the theme of the day and emphasized on the requirement of new approach by the engineers to develop the solutions amid COVID crisis in terms of redefining their roles to scale up vaccination production rate, production of PPE kits, medical equipment, network & communication management and transportation. He also illustrated the regime of lockdown led unemployment, skilled workers unavailability, nationwide economy breakdown, lack in R&D which needed to be compensated by innovations and upgrading the ecosystem around. Earlier, Mr Sukhvir Singh Mundi, Chairman, Punjab & Chandigarh State Centre and Council Member, IEI welcomed the guests and participants of the webinar. At the end, Prof (Dr) Baljit Singh, Honorary Secretary, Punjab & Chandigarh State Centre, IEI proposed the vote of thanks.

LOCAL CENTRES

Aligarh

Aligarh Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 through online mode. Speaker of the function, Prof Mohammad Kamil, Department of Petroleum Studies, Aligarh Muslim University, Aligarh delivered the thematic address. Earlier, Mr S C Gupta, Chairman, Aligarh Local Centre, IEI welcomed the participants.

Bareilly

Bareilly Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Bareilly. On the occasion, a technical seminar was organized on the theme of the day. Mr I C Jha, Plant Head and Executive Director, Indian Farmers Fertiliser Cooperative Limited (IFFCO), Bareilly graced the function as Chief Guest and Mr Anjay Jain, Chief Engineer, Uttar Pradesh Power Corporation Limited (UPPCL), Bareilly, the Guest of Honour. In the technical seminar, Mr Sovan Mohanty, Assistant Professor, Department of Electronics and Communication Engineering, SRMS College of Engineering and Technology, Bareilly; Dr B R Dutta, Director, ANA College, Bareilly and Mr Tanuj Kumar Bisht, Assistant Professor, Shree Siddhi Vinayak Group of Institutions (SSVGI), Bareilly deliberated lecture on the theme and shared their views. Earlier, welcome address was delivered by Mr Sudhir Kumar Gupta, Chairman, Bareilly Local Centre, IEI. Mr K B Agrawal, Mr Suresh Sundrani, Mr H C Gupta, Dr S K Jain and other dignitaries also shared the views and experience on the theme. At the end, Mr Mahendrakumar Agarwal, Honorary Secretary, Bareilly Local Centre, IEI proposed the vote of thanks.

Bokaro Steel City

Bokaro Steel City Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Bokaro. Chief Guest of the event, Mr R Kushwaha, Executive Director (Project) SAIL, Bokaro Steel Plant inaugurated the programme by lighting the lamp and garlanding the portrait of Dr M Visvesvaraya. In his address, Mr Kushwaha stressed upon the significance of employment oriented skill development. Guest of Honour, Mr Atanu Bhowmick, Executive Director (Works), SAIL, Bokaro Steel Plant in his address mentioned about the administrative and managerial capability of Sir M Visvesvaraya. Special Guest of the event, Mr K K Thakur, CEO, Bokaro Power Supply Corporation Limited (BPSCL) mentioned that Sir M Visvesvaraya was the epitome of ethics, disciplined dedication and excellence for others to be followed. Earlier, Mr Yogendra Nath Singh, Chairman, Bokaro Steel City Local Centre, IEI welcomed the dignitaries and participants. During the technical session, technical papers were presented by Mr Nitesh Ranjan, Assistant General Manager (Environment) and Mr K K Sanyal, Ex-Deputy General manager (EMD), SAIL, Bokaro Steel Plant.

Chandrapur

Chandrapur Local Centre, IEI in association with Rajiv Gandhi College of Engineering, Research & Technology (RCERT), Chandrapur observed 54th Engineers' Day on 15 September 2021 by organising webinar on the theme. On the occasion, Keynote Speaker, Dr Anupam Kher, Assistant Professor, Department of Mining Engineering, VNIT, Nagpur deliberated lecture on the theme and highlighted the skill sets required for practicing Engineers in the post COVID era. Speaker, Dr Z J Khan, Principal, RCERT, Chandrapur deliberated lecture on the theme and emphasized upon the qualities to be imbibed in the budding engineers to meet the challenges posed by COVID 19. Earlier, Prof Parvesh Kumar Singh, Chairman, Chandrapur Local Centre, IEI welcomed the guests and highlighted the significant contribution made by rural India during the Covid period. At the end, Prof Kishore Mukundrao Mulay, Honorary Secretary, Chandrapur Local Centre, IEI proposed the vote of thanks.

Coimbatore

Coimbatore Local Centre, IEI observed 54th Engineers Day on 15 September, 2021 in online mode. Dr M Muruganandam, Principal Scientist, Fisheries and Aquaculture & Fulbright Scholar, Hydrology and Engineering Division, ICAR-Indian Institute of Soil and Water Conservation, (ICAR- IISWC), Dehradun delivered the theme address as the Chief Guest. Dr Kannan Ambalam, Associate Professor, Department of Public Administration and Development Management, Wollega University, Nekemte, Ethiopia addressed the audience as Guest of Honour. Dr M Akila, Principal, KPR Institute of Engineering and Technology, Coimbatore was present on the occasion and addressed the audience. Earlier, Mr P R Natarajan, Chairman, Coimbatore Local Centre and Council Member, IEI delivered the welcome speech. Dr H Ram Mohan, Honorary Secretary, Coimbatore Local Centre proposed the vote of thanks.

Dhanbad

Dhanbad Local Centre, IEI observed 54th Engineers' Day on 15 September, 2021 in association with CSIR-CIMFR. On the occasion, Mr Probhat Kumar Kundu, Director (S&T) Directorate General of Mines Safety (DGMS), Dhanbad graced the function as Chief Guest and delivered Keynote speech on the theme of the day. He stated that the engineers should come up with a well-crafted strategy to deal with the pandemic crisis and mentioned that as uncertainty persists, the future workforce must be empowered with the right skills through timely and relevant skilling, up skilling and re-skilling efforts. After lightening the lamp and garlanding the portrait of Sir M Visvesvaraya, Dr M K Singh, Past Chairman, Dhanbad Local Centre, IEI welcomed the members and guests. Dr Satyendra Kumar Singh, Honorary Secretary, Dhanbad Local Centre, IEI presented life sketch of Sir M Visvesvaraya. The event was organized under the active guidance of Dr Pradeep Kumar Singh, Chairman, Dhanbad Local Centre, IEI and Director, CSIR-CIMFR, Dhanbad.

Faridabad

Faridabad Local Centre, IEI observed 54th Engineers' Day during 14-15 September 2021 at Faridabad. The technical session was held on 14 September 2021 through digital platform and on 15 September, 2021, 54th Engineers' Day was observed in hybrid mode. Mr Saket Bhatia, Director, Bony Polymers Private Limited graced the function as Chief Guest. During the technical session, the Panellists deliberated lectures with their expertise and shared their views with the participants, namely, Ms Sonakshi, Director, Technopan Industries, Faridabad; Dr Rajender Kumar, Assistant Professor, Department of Mechanical Engineering, Manav Rachna International Institute of Research and Studies (MRIIRS), Faridabad; Dr Rahul Sindwani, Assistant Professor, Mechanical Engineering Department, Amity University; Mr Ankur Mittal, Group Manager & Program Leader-Energy Management, National Council for Cement and Building Materials, Faridabad; Dr Anita Khosla, Professor and HoD, Department of Electrical and Electronics Engineering, MRIIRS, Faridabad; Ms Ashish Grover, Assistant Professor, Department of Electrical & Electronics Engineering, MRIIRS; Ms Richa Adlakha, Assistant Professor, Department of Electrical & Electronics Engineering, MRIIRS; Dr S V A V Prasad, Dean & Director, Lingayas Vidyapeeth, Faridabad & Mr Nikhil Kaushik, Research Scholar, Lingayas Vidyapeeth, Faridabad. The programme was started with lighting the lamp of knowledge digitally and welcomes address by Mr Sandeep Handa, Chairman, Faridabad Local Centre, IEI. At the end, Mr Kuldip Raj Gupta, Honorary Secretary, Faridabad Local Centre, IEI proposed the vote of thanks.

Ghaziabad

Ghaziabad Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 in hybrid mode. On the occasion, Chief Guest of the session, Mr Pramod Kumar Sinha, Vice President, Indian Water Works Association, delivered brief introduction on the theme and presented the life sketch of Dr M Visvesvaraya and his contribution in the field of engineering. Mr I K Kapila, Advocate & Solicitor, and Techno Legal Environmental Consultant, North Delhi and Dr Dharendra Kumar, Director, BLD Institute of Research & Learning, Ghaziabad were the Guest of Honours of the programme. Dr Dharendra Kumar presented the lecture on the topic 'Outcome Based Learning Systems in Engineering Education'. In his lecture, Dr Kumar stated the detailed requirement of the learning systems in engineering education and defined the gap in existing educational system and the available study materials. Mr I K Kapila presented lecture on the topic 'Technical Challenges and Opportunities in Environment Protection and Pollution Control' and briefed about the main challenges being faced by various stake holders involved with environment protection and pollution control measures. The function started with the opening remarks, delivered by Mr Chitra Kumar Tyagi, Honorary Secretary, Ghaziabad Local Centre, IEI and at the end, he also proposed the vote of thanks.

Jammu

Jammu Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Jammu. On the occasion, Mr B B Sharma, Former Chairman of Jammu Local Centre, IEI was the Chief Guest. Earlier, Dr (Prof) Sanjay Khar, Chairman, Jammu Local Centre, IEI welcomed the august audience and delivered lecture on the theme. At the end, Mr Chanchal Paul Sharma, Honorary Secretary, Jammu Local Centre proposed the vote of thanks.

Jodhpur

Jodhpur Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Jodhpur. Chief Guest of the event, Prof Santanu Chaudhury, Director, Indian Institute of Technology Jodhpur, shared his views on the challenges faced by professionals during COVID 19 pandemic and focussed on collaboration among different professional bodies for upliftment of the society. Guest of Honour, Mr Ravindra Kumar, Director, Defence Laboratory, Defence Research and Development Organization (DRDO), Jodhpur delivered Prof S C Goyal Memorial Lecture. In his deliberation, Mr Kumar presented different development programmes and research-based initiatives obtained by DRDO. Earlier, Dr (Prof) Akhil Ranjan Garg, Chairman, Jodhpur

Local Centre, IEI welcomed the guests, dignitaries and participants. At the end of the session, Dr Ghanshyam Prasad Vaishnav, Honorary Secretary, Jodhpur Local Centre, IEI proposed the vote of thanks.

Kanyakumari

Kanyakumari Local Centre, IEI in co-ordination with the Students Chapter of St. Xavier's Catholic College of Engineering, Nagercoil observed 54th Engineers' Day on 15 September 2021 through online platform. Chief Guest of the function, Mr S Krishnakumar, Founder & Senior Consultant, Nore Consulting Private Limited, Chennai delivered the Keynote address on the theme and explained different aspects of higher education at India and abroad. Mr Krishnakumar in his address, further emphasized on improvement of technical skills by the students. Mr V Sivathanu Pillai, Chairman, Kanyakumari Local Centre delivered the welcome address. Mr V Muthum Perumal, Honorary Secretary, Kanyakumari Local Centre also deliberated on the occasion.

Kadapa

Kadapa Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Kadapa. On the occasion, Mr G V Sreenivas Reddy, Superintending Engineer, Panchayat Raj Department, Kadapa was the Chief Guest and Ms N Sobha Valentina, Superintending Engineer, Operation Circle, Andhra Pradesh Southern Power Distribution Company Limited (APSPDCL), Kadapa was the Guest of Honour. Dr Kasigari Prasad, Associate Professor, Department of Electronics and Communication Engineering, Annamacharya Institute of Technology & Sciences (AITS), Rajampet delivered lecture on the theme of the day. Mr C Sree Ramachandra Murthy, Chairman, Kadapa Local Centre, IEI presided over the function. Prof (Dr) V Adinarayana Reddy, Honorary Secretary, Kadapa Local Centre, IEI delivered the welcome address and at the end, proposed the vote of thanks.

Ludhiana

Ludhiana Local Centre, IEI in collaboration with the Guru Nanak Dev Engineering College, Ludhiana, Students Chapter observed 54th Engineers' Day on 15 September 2021 at Ludhiana. On the occasion, Dr Arvind Dhingra, Executive Committee Member, Ludhiana Local Centre, IEI and Faculty Advisor, SCIE presented bio-sketch of Sir M Visvesvaraya. Mr Rup Lal Mahajan, Chairman, Ludhiana Local Centre briefed the audience about the theme and highlighted several new technologies, developed during COVID times. Earlier, Mr Surjit Singh, Honorary Secretary, Ludhiana Local Centre, IEI delivered the welcome address. At the end, Dr Arvind Dhingra proposed the vote of thanks.

Mangalore

Mangalore Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Mangalore. Chief Guest of the event, Prof KV Rao, Director, Regional Science Centre, Piliikula, Mangaluru deliberated lecture on the theme and commended the contribution of Sir M Visvesvaraya to the nation in general and to engineering in particular. Prof Rajesh Gratian D'Souza, Principal, Yenepoya Institute of Technology, Moodabidri compered and conducted the Proceedings of the deliberation. Earlier, Mr Sathish Rao Iddy, Past Chairman of Mangalore Local Centre, IEI welcomed the gathering. Prof K S Babu Narayan, Honorary Secretary, Mangalore Local Centre, IEI briefed about the Engineers' Day theme and at the end of the session, proposed the vote of thanks.

Meerut

Meerut Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Meerut. On the occasion, Prof (Dr) S N Chauhan, Director, S D College of Engineering & Technology (SDCET), Muzaffarnagar was the Chief Guest and Prof (Dr) A K Gautama, Principal, (SDCET) was the Guest of Honour. Mr Lokesh Chandra, Retired Chief Engineer, UP Power Corporation Limited was the Keynote speaker and Dr Pragati Sharma, HoD, Electronics and Communication Engineering Department (SDCET) was the speaker during the session. Chief Guest, Prof Chauhan in his address

stressed on technical intervention as professional engineers to design and implement necessary plans, policies and technologies for the welfare of people suffering from COVID. Earlier, Mr Rajneesh Kumar, Chairman, Meerut Local Centre welcomed the guests and participants of the programme. Mr C P Gupta, Past Chairman, Meerut Local Centre made a presentation of life sketch of Bharat Ratna Dr M Visvesvaraya and highlighted his contribution in engineering and Indian Society. At the end, Mr Mohan Lal Jain, Honorary Secretary, Meerut Local Centre proposed the vote of thanks.

Nashik

Nashik Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Nashik. On the occasion, Mr Hemant Tukaram Godse, Hon'ble Member of Parliament was the Chief Guest and Mr Mahendra R Kothari, Chairman (Elect), Maharashtra State Centre, IEI was the Guest of Honour. The programme was started with lighting the lamp in front of the statue of Sir M Visvesvaraya followed by welcome address presented by Mr Sumit Kantilal Khinvasara, Chairman, Nashik Local Centre, IEI. Past Chairmen of Nashik Local Centre, Mr Vijay Kothari, Mr Narendra Karbhari Birar, Mr Manish Mahendra Kothari, Mr T N Agrawal, Mr Santoshkumar Surajmal Mutha were also present on the occasion. At the end, Mr Samir Dilip Kothari, Honorary Secretary, Nashik Local Centre proposed the vote of thanks.

North Bengal

North Bengal Local Centre, IEI observed 54th Engineers' Day on 15 September 2021 at Jalpaiguri. A table discussion was conducted on the theme of the day. Mr Santanu Das, Honorary Secretary, North Bengal Local Centre, IEI welcomed the guests and participants and delivered lecture on the theme. At the end of the session, he also proposed the vote of thanks.

South Gujarat

South Gujarat Local Centre, IEI in association with Ultratech Cement Private Limited, Surat observed 54th Engineers' Day on 15 September 2021 at Surat and organised a workshop on the theme. On the occasion, Mr Ajit Radhakrishnan, South Gujarat Regional Technical Head, Mr Rajeev Jain & Mr Samir Patel, Marketing Head, Ultratech Cement Private Limited shared their thoughts with the august audience. Earlier, Mr Kirti Hiralal Shethna, Chairman, South Gujarat Local Centre and Council Member, IEI delivered the welcome address. Mr Dipak Gomanbhai Patel, Honorary Secretary, South Gujarat Local Centre, IEI introduced the esteemed guests and at the end of the function, proposed the vote of thanks.

Empanelment of Arbitrators

As per mandate of the Royal Charter, The Institution of Engineers (India) is to encourage the settlement of disputes by arbitration and to act as or nominate arbitrators and umpires.

The Institution maintains a panel of highly qualified and well experienced arbitrators. **Arbitration Engineer Certificate** is also being awarded to the empanelled arbitrators.

All eligible Fellow members of IEI, willing for empanelment as Arbitrators, are requested to send their applications along with non-refundable fees for vetting by the Arbitration Committee. The details are available at www.ieindia.org under 'Home'/Arbitration.

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.

STATE CENTRES

Gujarat

Gujarat State Centre, IEI observed Royal Charter Day on 9 September 2021 at Ahmedabad by organizing technical talk on the topic 'Growth of Transportation Sector in India'. Keynote speaker, Dr Rajesh Gujar, Assistant Professor, Civil Engineering Department, School of Technology, Pandit Dindayal Energy University, Gandhinagar delivered his presentation on the said topic. Earlier, Mr Hiro Udhavdas Kalyani, Chairman, Gujarat State Centre, IEI briefed the audience regarding background of Royal Charter conferred to IEI. Mr Shyam Varghese, Honorary Secretary, Gujarat State Centre, IEI proposed the vote of thanks.

Maharashtra

Maharashtra State Centre, IEI observed Royal Charter Day on 9 September 2021 by organising webinar. Keynote speaker of the function, Dr Mohan Balwant Dagaonkar, Council Member of IEI delivered lecture on this occasion. Mr V C Kamble, Convenor, Environmental Engineering Division, Maharashtra State Centre, IEI coordinated the programme. At the end, Dr Samir Chandrakant Nimkar, Honorary Secretary, Belapur Local Centre proposed the vote of thanks.

Manipur

Manipur State Centre, IEI observed Royal Charter Day on 9 September 2021 through both online and offline mode. Mr R R Tanwar, Chairman, Centre's Coordinating Committee, IEI graced the occasion as Chief Guest and delivered the Keynote address. The presidential address was delivered by Mr Thangjam Joykumar Singh, Chairman, Manipur State Centre. Earlier, welcome address was delivered by Mr Ashom Roudrajit Moirang, Honorary Secretary, Manipur State Centre, IEI and at the end; he also proposed the vote of thanks.

West Bengal

West Bengal State Centre, in association with Durgapur Local Centre, Asansol Local Centre and North Bengal Local Centre observed Royal Charter Day on 9 September 2021 through online platform. On the occasion, Mr Sisir Kumar Banerjee, Past President, IEI graced the function as Chief Guest and delivered the Keynote address. Past President, IEI in his address mentioned that since inception, this esteemed Institution has upheld the mandate of promoting and augmenting the science, practice and business of engineering through variety of activities, that provides meaningful insights to the policy makers regarding the matters related to the engineering profession and IEI is mandated to operate all its' functions as per the Royal Charter, Bye Laws, Regulation and Code of Ethics. He felt that it is the time, when the scientists, engineers, technologists and support workforce should come forward with the objective to build a new regime towards next normal. Earlier, Mr Sandip Kumar Deb, Chairman, West Bengal

State Centre, IEI welcomed the audience and briefed about the importance of Royal Charter Day. Prof (Dr) Kartik Chandra Ghanta, Chairman, Durgapur Local Centre, IEI in his opening address shared his views regarding the maintenance of engineering ethics for betterment of society and stressed on the integrity and service to the nation by means of engineering profession. Mr Mukul Prasad, Chairman, Asansol Local Centre, IEI in his address focussed on the technical activities organised by Asansol Local Centre. Mr M K Biswal, Honorary Secretary, Durgapur Local Centre, IEI informed the participants regarding Durgapur Local Centre in the Industrial City in West Bengal. At the end, Prof. Nitosh Kumar Brahma, Honorary Secretary, West Bengal State Centre, IEI proposed the vote of thanks.

LOCAL CENTRES

Bathinda

Bathinda Local Centre, IEI observed Royal Charter Day on 9 September 2021 and hosted a webinar on the occasion. Prof (Dr) T S Kamal, Chairman, Electronics & Telecommunication Engineering Division Board (ETDB) IEI graced the function as Chief Guest. Prof (Dr) N R Bandyopadhyay, Visiting Professor & Former Head, School of Materials Science and Engineering, Indian Institute of Engineering, Science and Technology Shibpur graced the function as Panellist. In his lecture, Prof Bandyopadhyay discussed the significance of observing Royal Charter Day and mentioned that the Royal Charter endowed the institution with the responsibility to promote the general advancement of engineering amongst its members and persons attached to the institution. He further mentioned that engineers play the key role in supporting the growth and development of the national economy as well as improving the quality of life for the citizens. Mr Sukhvir Singh Mundi, Chairman, Punjab & Chandigarh State Centre and Council Member, IEI was also present on this occasion and addressed the audience. Mr Manpreet Kaur, Assistant Professor, Electronics and Communication Engineering Department, Yadavindra College of Engineering, Talwandi Sabo was the Moderator during the session. Earlier, Prof (Dr) Jagtar Singh, Chairman, Bathinda Local Centre, IEI welcomed the panellists. Mr J S Deol, Honorary Secretary, Bathinda Local Centre, IEI concluded the webinar with vote of thanks.

Bokaro Steel City

Bokaro Steel City Local Centre, IEI observed Royal Charter Day on 9 September 2021 at Bokaro. On the occasion, Chief Guest of the event, Mr N P Srivastava, General Manager (Environment), SAIL, Bokaro Steel Plant inaugurated the function by lighting the lamp and spoke about prestigious Royal Charter grant to IEI. Earlier, Mr Yogendra Nath Singh, Chairman, Bokaro Steel City Local Centre, IEI welcomed all and spoke about the significance of observation of the day. A technical paper was presented by Mr Animesh Chandra on the topic 'Development of Skill and Employment'.

Ghaziabad

Ghaziabad Local Centre and Delhi State Centre, IEI jointly observed Royal Charter Day virtually as well as physically on 9 September 2021 at Ghaziabad. Mr Chandra Shekhar Prasad, Former Director General, Central Public Works Department was the Chief Guest and Mr Dinesh Kumar, Chairman, Delhi State Centre and Council Member, IEI the Guest of Honour. Mr Jai Pal Singh, Chairman, Ghaziabad Local Centre and Council Member, IEI delivered the welcome address and briefed about the Royal Charter Day. At the end, vote of thanks was proposed by Mr Jitendra Kumar Sharma, Honorary Secretary, Delhi State Centre, IEI.

Jammu

Jammu Local Centre, IEI observed Royal Charter Day on 9 September 2021 through hybrid mode. Mr Hamesh Manchanda, Chief Engineer, Jal Shakti (I&FC) Department, Jammu was the Guest of Honour on this occasion. Former Honorary Secretary, Jammu Local Centre, IEI, Mr Anil Verma delivered lecture on the history & relevance of Royal Charter Day under the annals of the Institution. At the outset, Dr (Prof) Sanjay Khar,

Chairman, Jammu Local Centre, IEI delivered the welcome address. A technical seminar was organised to mark the occasion. Mr Vinod Malhotra, Former Development Commissioner, Town Planning, Jammu delivered presentation on the topic 'History of Ranbir Canal' and Mr P K Nanda, Former Honorary Secretary, Jammu Local Centre, IEI delivered lecture on the topic 'Development Scenario of Jammu'. Mr Chanchal Paul Sharma, Honorary Secretary, Jammu Local Centre, IEI conducted the proceedings of the seminar and at the end, proposed the vote of thanks.

Kanpur

Kanpur Local Centre, IEI jointly with The Institution of Electronics and Telecommunication Engineers, Kanpur Centre; IEEE, Uttar Pradesh Section; Med Tech, Indian Institute of Technology Kanpur and Incubation Hub, Harcourt Butler Technical University, Kanpur observed Royal Charter Day on 9 September 2021 through online platform. On the occasion, a webinar was organised on the topic 'Emerging Technology for Air Pollution Controls – Smog Tower'. Guest Speaker during the event, Mr Gopal A Gupta, Prime Minister's Research Fellow Design Programme, Indian Institute of Technology Kanpur delivered lecture on the topic and deliberated on global warming, climate change and discussed about the preventive measures. Earlier, Prof (Dr) J Ramkumar, Chairman, Kanpur Local Centre, IEI delivered the welcome address. At the end, Dr Rajat Kumar Khare, Honorary Secretary of the centre proposed the vote of thanks.

Kanyakumari

Kanyakumari Local Centre, IEI observed Royal Charter Day on 9 September 2021 through online platform. On the occasion, Mr S Natarajan, Retired Chief Engineer, PWD, Tamilnadu graced the function as Chief Guest and delivered the Keynote address. Earlier, Mr V Sivathanu Pillai, Chairman, Kanyakumari Local Centre, IEI welcomed the Chief Guest and participants of the webinar. At the end, Mr V Muthum Perumal, Honorary Secretary, Kanyakumari Local Centre, IEI proposed the vote of thanks.

Ludhiana

Ludhiana Local Centre, IEI observed Royal Charter Day in collaboration with Students' Chapter, Guru Nanak Dev Engineering College, Ludhiana on 9 September 2021 at Ludhiana. On the occasion, Dr Arvind Dhingra, Faculty Advisor, Students Chapter Institution of Engineers (SCIE), Guru Nanak Dev Engineering College, (GNDEC), Ludhiana apprised the audience about the significance of Royal Charter. Earlier, Mr Surjit Singh, Honorary Secretary, Ludhiana Local Centre, IEI welcomed the gathering.

Meerut

Meerut Local Centre, IEI observed Royal Charter Day on 9 September 2021 at Meerut. Mr I P Singh, Director, Personnel & Administration, Pashchimanchal Vidyut Vitran Nigam Limited, Meerut graced the event as Chief Guest. Keynote Speaker, Mr B D Sharma, Convener, Indian Water Resources Society, Meerut Chapter delivered lecture on the topic 'Water Conservation and Water Harvesting' and explained the significance of rain water harvesting. Earlier, Mr Rajneesh Kumar, Chairman, Meerut Local Centre welcomed the guest and participants and briefed the history and background of Royal Charter. At the end, Mr Mohan Lal Jain, Honorary Secretary, Meerut Local Centre, IEI proposed the vote of thanks.

North Bengal

North Bengal Local Centre, IEI observed Royal Charter Day on 9 September 2021 at Jalpaiguri. Mr Santanu Das, Honorary Secretary, North Bengal Local Centre, IEI briefed about the significance of Royal Charter Day. A table discussion was held on this occasion. At the end, Honorary Secretary, North Bengal Local Centre proposed the vote of thanks.

Rourkela

Rourkela Local Centre, IEI observed Royal Charter Day on 9 September 2021 through hybrid mode. Dr Nutan Kumar Dash, Council Member, IEI deliberated lecture on the occasion and discussed about the incorporation

of Royal Charter, legal status of Charter in Post-Independence India and Provisions under Royal Charter. In the beginning, Dr H M Jena, Honorary Secretary, Rourkela Local Centre, IEI welcomed the members and guests and spoke about the importance of Royal Charter Day.

Saurashtra

Saurashtra Local Centre, IEI observed Royal Charter Day by organizing webinar on the topic 'Need of Engineer in Society & Career Guidelines to Engineers' on 9 September 2021. Speaker, Mr Amiyal A Badi, Deputy Executive Engineer, Government of Gujarat (Retd), Consulting Engineer and Government Approved Valuer, Alpha Engineering & Valuer, Rajkot delivered presentation on the topic. Earlier, welcome address was delivered by Dr Ashit Sureshchandra Pandya, Chairman, Saurashtra Local Centre, IEI.

Tiruchirappalli

Tiruchirappalli Local Centre, IEI observed Royal Charter Day on 9 September 2021 through virtual mode. Dr N Anantharaman, Visiting Faculty & Former Professor (HAG), Department of Chemical Engineering, National Institute of Technology Tiruchirappalli was the Chief Guest of the function and delivered address on the topic 'The Role of Professional Bodies in meeting the Global Challenges'. In his lecture, Dr Anantharaman emphasized the role of professional bodies to meet the UN Sustainable Development Goals (SDGs). Earlier, Prof (Dr) Natarajan Kumaresan, Chairman, Tiruchirappalli Local Centre and Council Member, IEI delivered the presidential address and welcomed the audience. Mr S Samidoss, Past Chairman, Tiruchirappalli Local Centre, IEI introduced the speaker to the audience. Mr R Selvaraj, Immediate Past Chairman, Tiruchirappalli Local Centre, IEI, proposed the vote of thanks.

Tiruvallur

Tiruvallur Local Centre, IEI observed Royal Charter Day on 9 September 2021 through online platform. Prof (Dr) D Thirunakkarasu, Deputy Director (Retd), Highways Research Station, Chennai graced the function as Chief Guest and delivered lecture on the topic 'Road Safety – Its Importance and Relevance in Urban'. In his lecture, Prof Thirunakkarasu stressed on improvement in knowledge in basic road safety rules, importance of road safety, etc. Earlier, Dr G Jayarajan, Chairman, Tiruvallur Local Centre, IEI delivered the welcome address and at the end, proposed the vote of thanks.

Udaipur

Udaipur Local Centre, IEI observed Royal Charter Day on 9 September 2021 at Udaipur. Chief Guest of the function, Dr Indrajeet Singhvi, President, Sai Tirupati University, Udaipur expressed his views on the dimensions and challenges being faced in various aspects of engineering and mentioned that to enhance the employability of engineering graduates, the curriculum need to be improved and practical training should be increased. Keynote Speaker, Mr Sohan Singh Rathore, Former Chairman of Udaipur Local Centre, IEI deliberated on the significance of Royal Charter. Earlier, Mr Yawanti Kumar Bolia, Chairman, Udaipur Local Centre, IEI welcomed the Chief Guest, speaker and other participants and deliberated about the significance of the Royal Charter Day. At the end, Mr Chandra Prakash Jain, Honorary Secretary, Udaipur Local Centre, IEI proposed the vote of thanks.

Upper Assam

Upper Assam Local Centre, IEI observed Royal Charter Day on 9 September 2021 through online platform. Chief Guest of the event, Mr Dibakar Bhattacharjee, Ex-Deputy General Manager, Indian Oil Corporation Limited (IOCL), Assam Oil Division (AOD) addressed the virtual audience. During the technical session, papers were presented by Mr Mriganka Jyoti Chetia, Engineer (Mechanical) DNPL on the topic 'Pipeline Construction'; Mr Jumon Duwarh, Engineer (Mechanical), DNPL on the topic 'Customer Driven Quality' and Mr Devanga Borah, Manager (Production), Assam Petrochemicals Limited on the topic 'Blockchain Technology'. Earlier, Mr Sasanka Pratim Deka, Chairman, Upper Assam Local Centre, IEI welcomed the audience.

News-in-Brief

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

STATE CENTRES

Chhattisgarh

Organized webinar on the theme 'Recent Trends in Chemical Technology' on 28 July 2021. Chief Guest of the session, Dr M P Sukumaran Nair, Centre for Green Technology & Management Cochin deliberated lecture on the topic 'Digitization in the Oil and Gas Industry : Scope and Potential' and focussed on the crisis and challenges, faced by oil and gas industry all over the world. Guest of Honour of the event, Prof (Dr) S N Saha, Professor, Department of Chemical Engineering, Guru Ghasidas Vishwavidyalaya (Central University) Bilaspur deliberated lecture on the topic 'Fluidised Bed Technology and its Industrial Application'. In his lecture, Prof Saha explained fluidization and its processing similar to liquefactions whereby a granular material is converted from a static solid-like state to a dynamic fluid-like state. He further discussed different operations through which fine solids are transformed into a fluid like state by means of contact with either gas or liquid and industrial applications of fluidized beds.

Jharkhand

Organised webinar on 8 August 2021 on the topic 'The Importance of Information Technology in tackling Disruption caused by COVID 19'. Dr Pabitra Mitra, Professor, Department of Computer Science and Engineering, Indian Institute of Technology Kharagpur deliberated lecture on the topic and explained different technologies applied in curbing COVID-19 including Contact Tracing, Tele Medicine etc. Mr Ehtasham Alam, Founder, Avanzoe Recycling Private Limited deliberated lecture on the topic and spoke about his journey from being employed to run a start-up during the pandemic times on recycling business and outlined the roadmap to generate more employment opportunities by means of circular economy, keeping IT at the epicentre. Dr Abdus Samad, Associate Professor, Department of Computer Engineering, Z H College of Engineering & Technology, Aligarh Muslim University, spoke about the role of Information Technology (IT) in the changing pattern of learning during COVID. Mr Siyarranjan Kumar Singh, Chairman, Jharkhand State Centre, IEI explained, how IT is playing the vital role in every walks of life, which include health, employment, education etc.

Punjab & Chandigarh

Organized technical webinar on the topic 'Construction Challenges' on 4 September 2021 through online platform. Chief Guest of the event, Mr S D Singh, Architect during his lecture stated that engineers and architects should apply their knowledge, common sense and wisdom to overcome the challenges during execution of projects. Keynote Speaker of the session, Mr Surinder Bahga, Architect, Saakaar Foundation in his presentation discussed on different construction related challenges while planning and designing any project and unforeseen challenges do come across during construction period.

Organized technical webinar on the topic 'Telecom Services in India – A Changed Scenario' on 22 September 2021 in collaboration with Department of Computer Science and Applications, Babbar Akali Memorial (BAM) Khalsa College, Garhshankar, Punjab through online mode. Prof (Dr) T S Kamal, Chairman, Electronics and Telecommunication Engineering Division Board, IEI graced the function as Chief Guest and addressed the audience. Keynote

Speaker of the event, Dr Labh Singh, Former Advisor to DoT, Government of India during his lecture shared the basics of telecommunications, the organization of telecommunication Department in India, history of telecommunications and so on. He further delved his knowledge about internet communication networks, computer networks, GSM networks etc. He also explained on emerging technologies and services namely Over The Top (OTT), Internet of Things (IoT), 5G Modulation, Orthogonal Frequency Division Multiplexing (OFDM) method etc.

Tamil Nadu

Celebrated Dr A P J Abdul Kalam Memorial Day on 27 July 2021 through online platform. A Panel Discussion was held on the topic 'Industry Perspective: Challenges faced by Aerospace Training Sector to meet Future Industry Demand with respect to COVID Operational Constraints'. On the occasion, Padmashri Prof R M Vasagam, Chairman, Aerospace Engineering Division Board and Chancellor, Dr M G R Educational and Research Institute, Chennai was the Chief Guest and delivered the thematic address. Guest Speakers on the occasion were Dr Yogananda Jeppu, Principal Systems Engineer, Honeywell Technology Solutions; Prof Rajkumar S Pant, Department of Aerospace Engineering, Indian Institute of Technology Bombay and Mr Sanjay Gopinath, Head, Marketing Communication, MathWorks India Private Limited.

Telangana

Celebrated 120th Birth Anniversary of Dr K L Rao, Honorary Life Fellow on 15 July 2021 at Hyderabad. Dr M V S S Giridhar, Professor & HoD, Centre for Water Resources, Institution of Science & Technology, JNTUH graced the function as Chief Guest and delivered lecture on the topic 'Rainwater Harvesting – A Sustainable Solution for Urban Climate Adaptation'.

Tripura

Civil Engineering Division of Tripura State Centre, IEI organized webinar on 26 June 2021. On the occasion, Dr Rumi Sutradhar, Lecturer, Gomati District Polytechnic, Udaipur delivered lecture on the topic 'Treatment of Pavement Shoulder using Coir Fiber'; Mr Rahul Choudhury, Civil Engineering Department, Techno College of Engineering Agartala on 'Comparison Study of Computer Aided Structural Analysis between Conventional Structural Modelling Approach & Modelling with Equivalent Diagonal Strut of URM (Unreinforced Masonry)' and Mr Jayanta Paul, Civil Engineering Department, Techno College of Engineering Agartala on the topic 'Comparison of Structural Response of a Tall Building with Mivan Wall Conventional Construction Approach under Seismic Lateral Loads'.

LOCAL CENTRES

Aurangabad

Organised Fifth International Conference on the theme 'Recent trends Research in Engineering & Science (ICRTRES 2K21)' in association with Padm Dr V B Kolte College of Engineering, Malkapur, Indian Society for Technical Education and Leva Chamber of Commerce Industries & Agriculture on 6 June 2021 through online platform. The objective of the Conference is to explore the talent of faculty members, researchers, discuss on different research activities etc.

In association with G S Mandal's Maharashtra Institute of Technology College of Engineering, Aurangabad organised national level technical event on the topic 'Techno-Minds-2K21' via online platform during 16 - 17 June 2021.

Coimbatore

Organised technical webinar in association with Department of Electronics and Communication Engineering, Kumaraguru College of Technology,

Coimbatore on 24 July 2021. The Chief Guest of the session, Mr R Santosh Kumar, Senior Manager, Ashok Leyland Hosur, delivered lecture on 'Industry 4.0 and its Applications in Manufacturing Industry'. Mr Kumar in his address, discussed on the challenges for the manufacturing industry to implement different components of Industry 4.0. Mr D Allin Joe, Assistant Professor, Department of Electronics and Communication Engineering, Kumaraguru College of Technology, Coimbatore introduced the Chief Guest.

Organised technical webinar in association with Department of Electronics and Communication Engineering, Hindusthan Institute of Technology, Coimbatore on 4 August 2021. Chief Guest on the occasion, Dr Vimalathithan Rathinasabathy, Director, Krishtec, Coimbatore delivered lecture on the topic 'LoRa for Smart City IoT Deployments : A Long Term Evaluation' and focused on LoRa basics and it's roles & uses in Smart City application, the Power of Solar Industry, advantages of LoRa Technology, application of LoRaWAN etc. Dr C Natarajan, Principal, Hindusthan Institute of Technology, Coimbatore addressed the audience. Ms N Vinodhini, Assistant Professor, Department of Electronics and Communication Engineering, Hindusthan Institute of Technology Coimbatore introduced the Chief Guest.

Organised technical webinar on 7 August, 2021 in association with the Department of Textile Technology, Kumaraguru College of Technology, Coimbatore. The Chief Guest of the event, Mr A Kanthimathinathan, Chief Executive Officer, WINSYS SMC, Coimbatore delivered lecture on the topic 'Total Productive Maintenance (TPM)'. Dr V Ramesh Babu, Associate Professor and Head, Department of Textile Technology, Kumaraguru College of Technology, Coimbatore also addressed the audience.

Organised technical webinar on 11 August, 2021 in association with the Department of Civil Engineering, KPR Institute of Engineering and Technology, Coimbatore. Chief Guest of the session, Dr Abdul Rahman Mohd. Sam, Associate Professor, Department of Structure and Materials, School of Civil Engineering, Universiti Teknologi Malaysia, delivered lecture on the topic 'Concrete – An Overview of Current and Future Trends' and discussed on basic concrete requirement, different aspects of compaction, curing, factors affecting durability of construction, nanomaterials for construction etc. Lt. Dr A K Priya, Associate Professor, Department of Civil Engineering, KPR Institute of Engineering and Technology, Coimbatore introduced the Chief Guest.

Gorakhpur

Organised technical webinar on 7 August 2021 on the topic 'Role of Embedded System in Wireless Sensor Network'. On the occasion, Prof Brijesh Kumar, Department of Electronic & Telecommunication Engineering, MMMUT, Gorakhpur delivered the Keynote lecture on the topic and discussed on application of Wireless Sensor Network with his expertise and experience. He explained the function of nodes, transceiver, antenna, microcontroller electronic circuit with sensor interface and so on.

Kalaburagi

Organised lecture meeting on 13 July 2021 at Kalaburagi. On the session, Mr Pawan Rangdal, Assistant Professor, Department of Ceramic & Cement Technology, PDA College of Engineering, Kalaburagi delivered lecture on the topic 'Ceramic Materials'.

Kanpur

Organized webinar on the topic 'Contributions of Indian Scientist in the Freedom Struggle of India' on 1 August, 2021 jointly with Vigyan Bharti, Kanpur Mahanagar and Indian Institute of Chemical Engineers, Kanpur Regional Centre. On the occasion, Prof (Dr) J Ramkumar, Chairman, Kanpur Local Centre and Dr Manoj Kumar Patairiya, Advisor & Scientist 'G', Science & Engineering Research Council (SERC), Department of Science & Technology, Government of India were the Guest Speakers and

deliberated lectures on the topic. Dr D S Bag, President, Vigyan Bharti, Kanpur Mahanagar welcomed the Guest Speakers and participants.

Neyveli

Organised technical lecture through online mode on 16 August 2021. Chief Guest and speaker of the event, Mr L Chandrasekar, Chief Vigilance Officer, NLC India Limited, Neyveli deliberated lecture on the topic 'Environment Conservation and its implication' and stressed on the importance of 'Reduce, Recycle and Reuse' to save the environment.

Tiruchirappalli

Organised lecture meeting jointly with Computer Society of India, Tiruchirappalli Chapter, Indian Institute of Welding, Tiruchirappalli Branch, Indian Institute of Metals, Tiruchirappalli Chapter and Indian Welding Society, Southern Zone on 27 July 2021 through virtual mode. On the occasion, Dr S Suresh, Professor, Metallurgical Engineering Department, PSG College of Technology, Coimbatore delivered lecture on the topic 'Distortion Control in a Large Welded Bridge Structure'. During his lecture, Dr Suresh discussed thoroughly about welding distortion and control system.

Organised lecture meeting on the topic 'Industrial Automation using Embedded Systems' on 3 August, 2021 jointly with Computer Society of India, Tiruchirappalli Chapter, Indian Institute of Welding, Tiruchirappalli Branch, Indian Institute of Metals, Tiruchirappalli Chapter and Indian Welding Society, Southern Zone through virtual platform. During the session, Mr M Sathish Kumar, Assistant Professor, C K College of Engineering and Technology, Cuddalore delivered lecture on the topic and explained different aspects of industrial automation.

Organized lecture meeting through virtual mode on 17 August 2021. Dr Roselyn, Professor, Department of Mechanical Engineering, MAM College of Engineering & Technology, Tiruchirappalli delivered lecture on the topic 'Hybrid Renewable Energy Conversion Practices Towards Optimization' and focussed on the enhancement of world energy consumption, primary energy resources reserve and its subsequent reduction due to dependence on the fossil fuel. He further discussed three most widely used renewable alternative energy sources, namely hydro, wind and photovoltaic.

Organized lecture meeting on 24 August 2021 through virtual mode. Speaker, Mr S Senthil Kumar, Regional Manager (Asia Pacific), Ford Motor Company, Chennai delivered lecture on the topic 'Overview of Environment Management'. During his lecture, Mr Kumar explained different aspects of environment and pollution. Earlier, Mr R Selvaraj, Immediate Past Chairman of Tiruchirappalli Local Centre, IEI welcomed the gathering. Mr S Samidoss, Past Chairman, Tiruchirappalli Local Centre introduced the speaker to the audience.

Tirunelveli

Organised technical seminar on 'Architecture & Construction Management' on 28 August 2021 through online mode. On the occasion, Dr V S Arun Srinivaas, Proprietor, Tech O Tech & Managing Director, Renaalayas Promoters, Builders, Interior Decorators and Project Management Consultancy acted as resource person and delivered lecture on the topic.

FORA

Water Management Forum

Organised exhibition on 'Save Water' during 22-23 September 2021 jointly with Civil Engineering Department, L D College of Engineering, Ahmedabad at Ahmedabad. Main objective of this exhibition is to provide awareness to the stakeholders related to water issues and required solutions to save the water resources for future generation. During the inaugural function, Dr A M Prabhakar, Principal, Gujarat Power Engineering Research Institute (GPRI), Mehsana graced the event as Chief Guest.



Engineering Staff College of India

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CONTINUING PROFESSIONAL DEVELOPMENT PROGRAMMES (CPDPs) FOR THE MONTH OF NOVEMBER 2021

Sl. No.	Name of the Course	Scheduled Dates
1	Online program on Solar Energy Storage and Related Issues.	01 – 03 Nov 21
2	Hybrid Additive Manufacturing	08 – 10 Nov 21
3	3D Printing Simulation using ANSYS AM Module	08 – 10 Nov 21
4	Project Management in Construction Industry	09 – 11 Nov 21
5	Assessment of Irrigation Demand and Irrigation Scheduling using Latest Software Applications	09 – 11 Nov 21
6	Project Management in Construction Industry	08 – 12 Nov 21
7	Firewall & VPN Security Administration (Online)	08 – 12 Nov 21
8	Big Data Analytics for Business Decisions (Analytics using Excel & Tableau) (Online)	08 – 12 Nov 21
9	Web Development using MEANS Stack (Classroom)	08 – 12 Nov 21
10	Selection of Technology of Sewerage Treatment Process – Conventional and Advanced.	09 – 12 Nov 21
11	Offline Program on Transmission Line Construction (Survey, Design of Lines and Construction Practices)	09 – 12 Nov 21
12	Centrifugal Casting - Concepts, Operations and Maintenance	08 – 12 Nov 21
13	Engineering Simulation using ANSYS & CFD	10 – 12 Nov 21
14	Scaling-up Climate Resilient Agriculture Practices towards Climate Smart Villages.	16 – 18 Nov 21
15	Feasibility study & preparation of DPR for Roads, Buildings & Bridges of Engineering Projects	16 – 18 Nov 21
16	Information Security Policies & Security Audit (Online)	15 – 19 Nov 21
17	Computer Hardware & Software Maintenance to Improve System Performance (Online)	15 – 19 Nov 21
18	Surface Engineering – Concepts, Applications and Emerging Technologies	16 – 19 Nov 21
19	ISO 50001 : 2018 Energy Management System – Lead Auditor Training	15 – 19 Nov 21
20	Online program on PAT Mechanism for Power Plants and DISCOMs	16 – 19 Nov 21
21	Operation, Maintenance and Performance Monitoring of Centrifugal Pumps and Compressors (With Practical Orientation)	15 – 19 Nov 21
22	Advanced Mechanization in Underground Mining	15 – 19 Nov 21
23	Advanced Excel Report Generation & Analytics (Online)	22 – 24 Nov 21
24	International Conference & Expo on “ Climate Change Impact on Ecosystems: Mitigation and Adaptation”	23 – 25 Nov 21
25	Internal Auditor Training for AS 9100 Rev D	23 – 25 Nov 21
26	Offline program on “Electrical Safety Procedures & Accident Prevention”	22 – 25 Nov 21
27	Water Safety Plan – Development and Implementation	22 – 25 Nov 21
28	Machine Learning & Artificial Intelligence (Classroom)	22 – 26 Nov 21
29	Network Administration: Configuring and Securing LANs and WANs (Classroom)	22 – 26 Nov 21
30	Emotional Intelligence Training for Effective Leadership Development (For Middle and Senior Level Management)	22 – 26 Nov 21
31	High Rise Buildings – Planning, Design, Construction & Maintenance Techniques	24 – 26 Nov 21
32	Hands-on Training on GIS Applications- Arc GIS	26 – 28 Nov 21

For detail information please contact:

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President IEI inaugurated Engineers' Bhawan at Alwar

The newly constructed Engineers Bhawan of Alwar Local Centre, IEI was inaugurated on 21 August, 2021 at Alwar. The Chief Guest of the function, Er Narendra Singh, President, IEI gracefully inaugurated the Engineers Bhawan in the august presence of the Special Guests of Honours of the function, Mr R R Tanwar, Chairman, Centre's Co-ordination Committee, IEI; Mr Sajjan Singh Yadav, Chairman, Rajasthan State Centre, IEI and Dr HRP Yadav, Former Secretary & Director General IEI and Director, HQ Cell, Delhi. Mr Subhash Chandra Joshi, Chairman Alwar Local Centre, Mr Raj Deep Sharma, Honorary Secretary, Alwar Local Centre, Mr M L Yadav, Immediate Past Chairman, Alwar Local Centre and other dignitaries were present on the occasion.



36th

INDIAN ENGINEERING CONGRESS

Delhi, December 26-27, 2021

Theme:

Engineers for Viable Technology and USD 5 Trillion Economy

Organized by

The Institution of Engineers (India)

(Technical Sessions will be held online during 15 to 17 December 2021)

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