



IEI NEWS



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A CENTURY OF SERVICE TO THE NATION

Volume 26

Number 10

IEI wishes its Members a Happy New Year

34th Indian Engineering Congress, Hyderabad

Societal Engineering – Imperatives for Nation Building



The 34th Indian Engineering Congress of The Institution of Engineers (India) was organized by the Telangana State Centre of the Institution on the theme 'Societal Engineering – Imperatives for Nation Building' during December 27-29, 2019 at Hyderabad International Convention Centre, Hyderabad. Hon'ble Governor of Telangana, Dr (Smt) Tamilisai Soundararajan, graced the occasion as Chief Guest during the inaugural session. During her address, Hon'ble Governor emphasized on the wide application domain of Artificial Intelligence with human machine interface and greener lifestyle with smart utilization of natural resources. Mr Vemula Prashanth Reddy, Hon'ble Minister for Roads & Buildings, Legislative Affairs and Housing,



Government of Telangana was present during the occasion as Guest of Honour. During his address, Mr Reddy stressed on the duties and responsibilities of engineering fraternity to solve complex social problems. Dr T M Gunaraja, the then President, IEI, during his address focused on the continuous learning process of the young engineers through training and development and interface with the industry to bridge the employability gap in a constructive manner. Dr Gunaraja further recommended that the engineers should initiate in defining its own future, by transforming engineering education to help achieve the vision, accommodating innovative developments from non-engineering fields; and find ways to focus the synergies

of different disciplines of engineering towards achieving common goals. Er Narendra Singh, the then President Elect, IEI during his address focused on forthcoming challenges before the engineering fraternity including enhancing agricultural productivity, water preservation, disaster management, enhancement of skills and employability.

On this occasion, the Technical Volume and the Souvenir of the Congress were released by the Chief Guest along with other dignitaries on the dais.

During the inaugural session, the prestigious NDRF Design Awards, Safety and Quality Awards and Water Management Forum Awards were presented. The inaugural ceremony was well attended by the illustrious Past Presidents, Vice Presidents, distinguished Council Members, and delegates from foreign countries and learned Corporate Members of the Institution. Large number of practicing engineers, technocrats, research scholars from industry and academia, students from reputed engineering institutions all over the country has attended the Congress. Earlier, Dr G Rameshwar Rao, Chairman, Telangana State Centre in his welcome address mentioned that Indian Engineering Congress is the right platform for dissemination of knowledge and ideas. Maj Gen (Dr) S Bhattacharya, VSM (Retd), Secretary & Director General of the Institution proposed the vote of thanks.

The Inaugural Session was followed by the Visionary Talk delivered by Prof GONG Ke, President, World Federation of Engineering Organizations, (WFEO) on the theme 'Transform Engineering for Sustainable Development'. During his address, Prof GONG Ke lucidly explained the objectives of





Four technical sessions were conducted concurrently with the Congress, where nearly eighty papers were presented by the experts from industry and academia followed by meaningful deliberations and interactive sessions. Each session was chaired by distinguished engineering personalities of the country. A large number of industrial case studies were presented during the sessions by the paper presenters from RITES, Engineers India Limited, Tandon Consultants Private Limited, Delhi Metro Rail Corporation, L&T, NTPC, NICMAR, JK Cement, NLC India Limited along with academic presentations by the experts from IIT Kharagpur, Jadavpur University, JNTUH, NIT Jalandhar, UPES Dehradun, Annamalai University, MANIT Bhopla, Delhi Technological University, VIT Vellore, IIT BHU, Sant Longowal Institute of Engineering and Technology and others.

During the Congress, an International Meet was organized with the august presence of foreign delegates from Zimbabwe, Nepal, Bangladesh, Sri Lanka and China, office bearers from Qatar and Kuwait Overseas Chapters and distinguished Past Presidents of IEI.



The Women's Engineers Meet was organized during the Congress with the active participation of large number of lady engineers with the august presence of Prof (Dr) Kavita Daryani Rao, Vice Chancellor, Jawaharlal Nehru Architecture and Fine Arts University, Hyderabad as Chief Guest. Other speakers include Dr Nayanathara K S, Principal, CVR College of Engineering, Hyderabad and Dr Samin Fatima, Senior Scientist, System Modeling and Simulation, DRDO, Hyderabad. Dr T M Gunaraja, the then President, IEI was present during the occasion and addressed the gathering. A Souvenir was also released during the occasion.

The IEI Alumni Meet was organized during the occasion with the august presence of Dr T M Gunaraja, the then President, IEI as the Chief Guest, Mr Sisir Kumar Banerjee, the then Immediate Past President, IEI, Er Narendra Singh, the then President-Elect, IEI, distinguished Council Members and Corporate Members of the Institution. A Souvenir was also released during the occasion.

During the occasion, a Technical Exhibition was organized, with active participation from reputed organizations.

The 100th Annual General Meeting of the Institution was held on December 29, 2019 which was attended by large number of Corporate Members of the Institution. Dr T M Gunaraja, the then President, IEI presented the Best State Centre Award to Telangana State Centre and Best Local Centre Award to Durgapur Local Centre of the Institution. The Annual Report of IEI and Audited Accounts of IEI for the year 2018-19 were accepted



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UN Sustainable Development Goals (SDGs) and commitment to UN 2030 Agenda towards eradication of poverty and mentioned that engineering and technology are the key to achieve SDGs. President, WFEO emphasized on transforming engineering education to meet the requirement of fourth industrial revolution, implementation of Cyber Physical Societal System, powerful Deep Learning, Artificial Intelligence empowered engineering and recommended to build worldwide education standard; embedding sustainability as the core of engineering education; ethical management of AI applications and so on. The second Visionary Talk was presented by Mr A Ayodhya Rami Reddy, Chairman, Ramky Group during the occasion. The third Visionary Talk was presented by Dr H Sarvothaman, Former Deputy Director General, Geological Survey of India, Hyderabad on the topic 'Energy Security: Financial and Generation Budget for Power -First Step towards Sustainable Development'. During his address, Dr Sarvothaman lucidly explained power generation in global energy scenario utilising conventional resources including thermal, hydro, gas, wind, nuclear power etc. He further highlighted generation of storage type energy generation in the form of Lithium batteries and its' wide application in telecommunication, automobiles etc.

The Monograph prepared under the aegis of World Federation of Engineering Organizations- Committee on Information and Communication (WFEO-CIC) titled 'Digital Transformation -Industry 4.0 Paradigm' was released on this



occasion by Prof GONG Ke with the august presence of the then President, IEI, the then President-Elect, IEI and the Past Presidents of the Institution.

Eight Memorial Lectures in the memory of distinguished engineering personalities were delivered by the experts in the field.

The prestigious Prizes and Awards in different categories for the papers published in the Journals of The Institution of Engineers (India) during the year 2018 were presented to the recipients by Dr T M Gunaraja, the then President, IEI.



Address by

Er Narendra Singh President, IEI

Text of the Presidential Address delivered by Er Narendra Singh, President, IEI
during the 100th Annual General Meeting of the Institution held at Hyderabad on December 29, 2019



Respected Past Presidents, My Dear Fellow Council Members and Corporate Members of The Institution of Engineers (India);

I feel honoured and privileged to have been installed as President of The Institution of Engineers (India) for the session 2019-2020 in the historic city of Hyderabad. I accept this great honour bestowed upon me with a sense of humility and a commitment to work towards meeting the objectives and goals of this great institution. I thank all council members, well-wishers and friends especially in the engineering

community and also those who are present here, whose encouragement and support have provided me an opportunity to serve the institution to the best of my abilities. I like to extend my sincere gratitude and thanks to the National Council of The Institution of Engineers (India) for the confidence reposed in me and electing me unanimously as the President of this largest and premier professional body of the country. My sincere thanks to Dr T M Gunaraja, who has rendered able leadership to this Institution prior to me. I shall seek guidance and wholehearted cooperation from the esteemed Past Presidents and Council Members of this Institution to discharge my responsibilities for achieving the objectives and goals of this great Institution.

On this occasion, I would like to pay my due regards to the doyens of engineering profession such as Bharat Ratna Sir M Visvesvaraya, Sir R N Mookerjee, Dr A N Khosla, Dr Triguna Sen, Dr K L Rao, Dr Satish Dhawan, Dr U Ramachandra Rao and many more whose excellent contributions formed the foundation of development of our country.

Genesis of The Institution of Engineers (India)

The Institution of Engineers (India) was established in the year 1920 based on the recommendations of Er Thomas Holland, Industrial Commissioner of India to provide scientific and technical inputs to an ever-growing industrial economy of our country.

The Institution was registered on 13 September 1920 in Madras and subsequently moved to Calcutta with Sir Thomas Ward as its first President. He was succeeded by Sir R N Mookerjee, an eminent engineer cum entrepreneur who took over as President of the Institution in the Inaugural Ceremony at the first Annual General Meeting held in the hall of "Asiatic Society of Bengal" in Calcutta.

The Emerging Scenario

This Institution has already entered into the 100th year of its establishment on 13 September 2019. The centenary celebration was inaugurated by the Hon'ble Governor of Tamil Nadu. He advocated that engineers are the real architect to make the country prosperous.

This Institution was established with the twin objectives of 'Indianization' and 'Industrialization' at a time when the development of the country was being thought of in strategic terms. These objectives have largely been met and engineering has been widely acknowledged as the backbone of the multi-functional development in the country. To augment these, there is a need for signing of more MoUs with the Government Departments such as MSME, CPWD, MNRE, MHRD and Ministry of Skill Development, industry organizations, and academic institutions. During the centenary year, many more events will be organised by this Institution to enhance the image of IEI.

Under IEI Centenary activities, Curtain Raiser Events have been organised jointly with Indian Railways at various Centres of IEI in the country. It is now time to formulate new goals for the next Century to set meaningful and pragmatic objectives.

I would like to accelerate such events at many more Centres during my tenure also. I, therefore, humbly request all the concerned to extend their wholehearted support to mobilise such events in the Centenary Year to enhance the image and visibility of IEI.

IEI's Role as Scientific and Industrial Research Organisation (SIRO)

I am happy to mention here that The Institution of Engineers (India) is recognised as Scientific and Industrial Research Organisation (SIRO) by Govt. of India. IEI is promoting the R&D Grant-in-Aid programme which is recognised by the Department of Scientific & Industrial Research Organisation (DSIR), Ministry of Science & Technology, Govt. of India. This R&D Grant-in-Aid is provided by IEI to encourage researches by IEI members who are faculty and students of engineering institutes.

National Level Challenges & Engineering Congress

I would like to echo in word and spirit the sentiments expressed by the first Indian President of the Institution of Engineers that "Industrial progress of India is only possible through engineers, supported by adequate financial power. The newly formed institution will prove a powerful and effective organization to promote the efficiency and training of Indian engineers, without which the unrivaled resources of India cannot be developed".

The prestigious Indian Engineering Congress was first held in 1987 with the intention to bring together the engineering fraternity of the country as well as from the different parts of the globe to discuss contemporary issues. The issues of green environment, depletion of fossil fuels, infrastructure creation, employment generation and imparting the overall quality of human lives; etc will be the prime focus during my tenure. These issues will be addressed to fulfill the demand of the country for nation-building.

We are hosting this 34th Indian Engineering Congress on the theme "Societal Engineering – Imperatives for Nation Building".



IEI's Section A and Section B Examination

The Institution of Engineers (India) is a pioneer in the field of specially-designed engineering education in the country. During 1928, when the infrastructure of Indian Education was inadequate, the Institution in its wisdom, coupled with a visionary view and in conformity with the provisions of the Royal Charter, commenced conducting Sections A and B Examinations (popularly known as AMIE examination) in engineering disciplines. It creates an opportunity to many who due to their economic conditions and otherwise would not be able to avail admission to an engineering college and pursue a formal engineering degree course.

It is also a known fact that IEI was the first accreditation body in India since 1935 and regulated the engineering programme in India. There have been some recent developments in Engineering education and some emerging courses have been included in the curricula to meet the requirements of industry and employability.

IEI is also implementing to upgrade its syllabi of AMIE Courses to make it at par with the courses of premier engineering institutes. Recently, there have been many advancements in the technologies and many more new topics such as biomedical engineering, artificial intelligence, internet of things, global warming and climate change; etc have been added in the respective discipline of the undergraduate courses. To keep the IEI's AMIE Courses at par, the syllabi need to be revised which will be taken up on a priority basis during my tenure.

IEI Professional Certifications

The Institution of Engineers (India) provides some important certificates to the competent engineering professionals in recognition of their experiences, contributions, and achievements in the field of engineering and technology. These include:

- International Professional Engineers (IntPE) Certificate
- Professional Engineers (PE) Certificate
- Chartered Engineer Certificate

The certificates to the competent professional engineers will be given due importance in my tenure.

IEI Professional Publications

This Institution brings out some engineering journals of international repute, publishes monthly Newsletters containing technical events of international, national and regional levels. More quality papers will be added to the technical journals.

IEI Membership Growth

There are 124 State and Local Centres with a Corporate membership strength of more than 2.30 Lacs Corporate and about 5.50 Institutional Members. There is a need to increase the corporate membership of IEI. I make appeal to the office bearers of all the State/Local Centres to put their best efforts to enhance the membership in their respective Centres. IEI should continue its efforts to attract competent engineering professionals for national PE and International PE Membership. The Heads of the institutions/industries should also be approached by us to request them to come forward to get their organisations enrolled as Institutional Member.

Professional Engineers Bill

There are several Acts for different professions in the country; such as the Architects Act, Indian Medical Council Act, Pharmacy Act; etc but so far, there is no such act for the engineering profession. The Institution of Engineers (India) has been putting its best efforts since long to bring Professional Engineers Bill in the country to safeguard the engineering

profession. The basic purpose of this Bill will be to register engineers through an assessment process in the national register. Many a time Govt. of India took initiatives to enforce the Professional Engineers Bill but, somehow, it has not yet been materialised. I am happy to mention here that The Institution of Engineers (India) is the only largest professional body in the country which has been granted Royal Charter Status. I shall highlight the achievements of this prestigious Institution to take lead in the responsibility of Professional Engineers Bill. We shall try our best to project IEI's vast network and infrastructure to take the major responsibility of Professional Engineers Bill. This important issue will be addressed with the cooperation of all engineering fraternity.

Engineering Staff College of India (ESCI), Hyderabad

There is also a state-of-the-art Institution known as Engineering Staff College of India (ESCI) located at Hyderabad. ESCI conducts continuing education programmes, technical training courses across the country to enhance the skills and knowledge of practicing engineers/technologists. It also provides knowledge and training to our budding engineers.

As the constituent autonomous of The Institution of the Engineers (India), the Engineering Staff College of India (ESCI) is at the forefront in the professional development of engineers in both core engineering disciplines and also interdisciplinary domains such as climate change, quality management, intelligent transportation, renewable energy.

IEI's Overseas Chapters

IEI has six overseas chapters; namely; Abu Dhabi, Bahrain, Dubai, Kuwait, Nepal, and Qatar. IEI will also try to set up its Centres in Bangladesh and Bhutan in 2020. Efforts are to be made to open more centres at the locations of neighbouring countries.

International Linkages and Bilateral Relationships

IEI has bilateral relationships with 33 sister professional bodies. IEI is a member of several International engineering professional organisations. They include; WFEO, FEISCA, FEIAP; etc. IEI is also a permanent member of the International Professional Engineers Agreement (IPEA) since 2009. IEI certifies International Professional Engineers in India as per the systems and procedures laid down in the IPEA requirements.

• World Federation of Engineering Organisations (WFEO)

The World Federation of Engineering Organizations (WFEO) was established in 1968 by a group of regional engineering organisations under the auspices of UNESCO in Paris. WFEO is an international non-governmental organization representing the engineering profession worldwide. WFEO brings together national engineering institutions from over 90 nations and represents more than 20 million engineers from around the world. India is represented by IEI in WFEO. There are various functional committees through which the objectives of WFEO are fulfilled. I am happy to inform, to this august gathering that one of our present member of the council and Past President has been elected with majority of votes as National Member of the Executive Council of WFEO for a period of four years (2019-2023) during meeting of the General Assembly of WFEO on 23 November 2019 in Melbourne, Australia.

• Federation International du Béton (fib)

The fib, Federation International du Béton is a non-profitable association formed by 42 national member groups and approximately 1000 corporate and individual members. The fib's mission is to develop at an international level the study of scientific and practical matters capable of advancing the technical, economic, aesthetic and environmental performance of concrete construction. The knowledge developed and shared by the fib (fib Bulletins, fib events, fib workshops, fib courses,



etc.) is entirely the result of the volunteer work provided by the fib members. The fib was formed in 1998 by the merger of the Euro-International Committee for Concrete (the CEB) and the International Federation for Pre-stressing (the FIP). These predecessor organizations existed independently from 1953 and 1952, respectively. IEI is the national member of fib and taking part in its activities to update knowledge in the field of concrete technology.

- **Federation of Engineering Institution of Asia and Pacific (FEIAP)**

The Federation of Engineering Institutions of Asia and Pacific (FEIAP) is an international non-profit professional organization founded on 6 July 1978. Being an independent umbrella organization for the engineering institutions in Southeast Asia and Pacific region, the objectives of FEIAP are:

To encourage the application of technical progress to economic and social advancement throughout the world, to advance engineering as a profession in the interest of all people, and to foster peace throughout the world.

IEI is also a National Member of FEIAP.

- **Federation of Engineering Institutions of South and Central Asia (FEISCA)**

This international professional organization is a federation of professional bodies of some neighbouring countries e.g. India, Bangladesh, Nepal, Sri Lanka, and Pakistan. The objective is to extend the cooperation and exchange of information amongst national Members and promote regional cooperation in utilizing science and technology.

Role of IEI Foras

IEI has created six National Fora in different parts of the country to meet its social obligations. These fora's aims and objectives have been well defined as per their Statutes and Fora are supposed to function pragmatically to create awareness programmes and to meet the requirements of industry, skills, and employability.

Each forum is headed by an able Chairman, who is a Special Invitee to the IEI Council. I would humbly request them to accelerate the progress of the activities of the respective Forum. More and more activities are required to be carried out on International as well as national levels.

I shall expect adequate contributions from the execution of Fora.

- **National Skill Development Forum (NSDF), Shimla**

The National Skill Development Forum was established at the premises of Himachal Pradesh State Centre, Shimla. The objectives of NSDF are:

"To promote skill enhancement, capacity building, quality training in emerging, evolving, cutting edge technologies for professional engineers, managers, scientists, and young graduates".

- **National Design and Research Forum (NDRF), Bengaluru**

To provide a national platform for promotion of design, research and development in a multi-dimensional framework and for useful interaction between designs, research, and development and construction. To recognise creative design talents by the presentation of National Design Awards every year to the deserving professionals.

- **Rural Development Forum (RDF), Kolkata**

To encourage the development of energy and information pertaining to multifaceted development of rural India and to disseminate information on all matters pertaining to application of engineering for rural development.

- **Sustainable Development Forum (SDF), Patna**

To evolve and make policy recommendations in the field of sustainable development based on experience gained out of the programmes and exchange of knowledge. The Forum has to undertake specific programmes pertaining to sustainable development in collaboration with central and state government.

- **Safety & Quality Forum (SQF), New Delhi**

To do network with various national, regional and local government bodies; international and national organizations and inculcate the concepts of safety and quality in application and operations.

To promote and propagate the concept of Safety and Quality through networking mechanism, assist industrial/government unit in undertaking quality and/or safety audits and develop courses, syllabi and course materials for 'Safety Engineering', 'Quality Management' and 'Reliability Engineering' for different levels of engineering education and recommend the same to educational authorities/institutions.

- **Water Management Forum (WMF), Ahmedabad**

To promote and advance the engineering and practice of economic and cost-effective management of water resources in its totality. The activities and services have attracted the attention of the Central Government and a number of State Governments.

World Engineers' Day

Further, I wish to inform you that the WFEO President Dr (Ms) Marlin Kanga during the WFEO meeting held on 21 November 2019 at Melbourne, Australia announced that the long pending demand of observing "World Engineers' Day" was approved by UNESCO. The "World Engineers' Day" would be observed on 4th March every year as Statutory Day. I have pleasure in announcing that IEI would organise first World Engineers' Day on 4 March 2020 (Wednesday) in India under the aegis of WFEO and it will be continued in the years to come.

I am aware that IEI has been carrying out a large number of activities of international and national repute. However, it is high time to focus on several initiatives to be taken by this prestigious Institution like Skill India Mission, Digital India Mission, Solar Mission; etc. These areas can be covered by the respective Forum of IEI. IEI needs to have close linkages with the Central Govt., State Govt., Local Civic Bodies. This may be possible when we take up their responsibilities for nation-building.

Before I conclude, I also wish to touch upon some important aspects such as the strengthening of IEI Alumni and the empowerment of Women Engineers. This is our prime responsibility and duty to pay due attention to promote and strengthen IEI Alumni and Empowerment of Women Engineers.

I am very much aware that we have a number of challenges but these can be achieved with the concerted efforts of all of us. We shall put our best efforts with full dedication and conviction to achieve our objectives to make better and prosperous IEI.

In conclusion, I extend my best wishes to all the dignitaries present in this august gathering of the 34th Indian Engineering Congress.

"If you want to go fast, walk alone,

If you want to go far, walk together"

Wishing you All a Very Happy & Prosperous New Year.

Thank you

Jai hind....



Memorial

Lectures

The following Memorial Lectures, instituted by the Institution in memory of stalwarts in the engineering profession, are a salient feature of the Indian Engineering Congress organized annually by The Institution of Engineers (India). During the Thirty-fourth Indian Engineering Congress, these lectures were delivered by leading experts from diverse fields. Following are some excerpts of the lectures.

The 62nd Sir Mokshagundam Visvesvaraya Memorial Lecture



Sir Mokshagundam Visvesvaraya Memorial Lecture was instituted in the year 1957-58 in the memory of Late Sir M Visvesvaraya, the doyan of Indian engineering. The 62nd Sir M Visvesvaraya Memorial Lecture was delivered by Dr A Gangagni Rao, Chief Scientist, Department of Energy and Environmental Engineering, CSIR-Indian Institute of Chemical Technology (IICT),

Hyderabad on the theme 'Interfacing of Engineering with Biology-Innovations for Societal Applications'. During his address, Dr Rao mentioned the opportunities for engineers in the field of advancement in engineering, climate change, carbon capture and waste management. The speaker explained different categories of waste and its characteristics, different waste management methods with its objectives, organism, working principle of biomethanisation and solid waste digesters, functional aspects of anerobic gas lift reactors, biological waste treatment methods, applications of biofilters, integrated process for sewage treatment and sewage sludge, accelerated biological decomposition of bio wastes and so on. The speaker during his deliberation, lucidly explained the function of Waste to Energy Digestive Models, high rate biomethanation of organic fraction of municipal solid waste for the generation of biogas based power and bio-manure, Sequential biological process for simultaneous removal of Chemical Oxygen Demand (COD) ammoniacal nitrogen from industrial waste waters etc.

The 54th Nidhu Bhushan Memorial Lecture



Nidhu Bhushan Memorial Lecture was instituted in the year 1966 in the memory of late Nidhu Bhushan Chatterjee, a social worker. 54th Nidhu Bhushan Memorial Lecture was delivered by Prof Sandeep Sancheti, Vice Chancellor, SRM Institute of Science and Technology, Chennai on the theme 'The Changing Face of Higher Education in India'. Prof Sancheti during his address

explained different controls and regulations to improve the quality of higher education and to develop the quality of engineering education in the country and the scopes of improvement in the quality of engineering education and service. Prof Sancheti mentioned that autonomy, speed, accuracy and diversity are the four prime factors for development of engineering education. Prof Sancheti further recommended to redefine smart technologies for educational paradigm shift including enhanced applications of virtual laboratories, online examinations and liberal engineering. Prof Sancheti

opined that research should be accepted as a benchmark of academic performance and newer models be introduced to accommodate research in academic world and subsequent mechanisms be developed to measure performances and incentivize them.

The 41st Sir Rajendra Nath Mookerjee Memorial Lecture



Sir R N Mookerjee Memorial Lecture was instituted in the year 1990 in the memory of Late Sir Rajendra Nath Mookerjee, the first President of The Institution of Engineers (India) with an Indian origin. The 41st Sir R N Mookerjee Memorial Lecture was delivered by Mr Venguswamy Ramaswamy, Global Head, TCS iON. During his address, Mr Ramaswamy focused

on the key aspects towards development of societal engineering, which include; building a robust economy involving society at large, accelerated development without destruction, leveraging physical assets along with the digital technologies, self learning systems and so on. He mentioned about new job opportunities through a host of new technologies including automation, analytics, robotics, artificial and cognitive intelligence, additive manufacturing, machine learning and more with the objective to poise a new skill economy, where the work environment is compatible with tasks, co-creation and adaptable teams, continuous mode of learning and transformed methods of sourcing talent by distributed collaborative teams. Mr Ramaswamy mentioned that to achieve a new skill economy, education should be personalized, continuous and engaging that leads to development without destruction.

The 45th Bhaikaka Memorial Lecture



Bhaikaka Memorial Lecture was instituted in the year 1976 in the memory of Late Bhailal Bhai Patel, popularly known as Bhaikaka, an eminent engineer, educationist and administrator. The 45th Bhaikaka Memorial Lecture was delivered by Prof R Velraj, Former Director, Institute of Energy Studies, College of Engineering, Guindy, Anna University, Chennai on the theme

'Harnessing Free Energy Potential through Energy Storage for Sustainable Societal Development'. During his address, Prof Velraj explained the energy challenge and power scenario in India, focusing on estimated energy storage, loss due to transmission and distribution and wastage of food products due to lack of storage facility. Prof Velraj mentioned agriculture and buildings as the highly energy intensive sectors due to the agrarian nature and rapid urbanization. During his address, the speaker lucidly explained different aspects of renewable energy storage, compressed energy storage, imperatives of energy supply and demand and opined that the high intermittency in the available renewable energy sources demands storage integration to bridge the gap between supply and demand, free cooling concepts in buildings with PCM Regenerative Heat Exchanger. Prof Velraj recommended redesign of renewable energy storage and regular energy audit in high rise buildings and other establishments on regular basis as per norms.

The 28th Dr Amitabha Bhattacharyya Memorial Lecture



Dr Amitava Bhattacharyya Memorial Lecture was instituted in the year 1992 in the memory of Late Dr Amitava Bhattacharyya, an eminent engineer-teacher and Past President of the Institution. The 28th Dr Amitava Bhattacharyya Memorial Lecture was delivered by Prof B S Murty, Director, Indian Institute of Technology Hyderabad on the theme 'Nano Materials with Exceptional

Properties developed through Top Down Approach'. During his address, Prof Murty lucidly explained the properties, functions and applications of nanocrystalline materials for structural and functional applications; High Entropy Alloys; Bulk Metallic Glasses; Grain Refinement of Al Alloys; In-Situ Composites and Metal Foams. While deliberating on grain refinement and modification of materials, Prof Murty mentioned that optical properties of materials get changed with the change in grain size and explained wide functional domain of Nano Aerogels, high strength in-situ nanocomposites, nanosteel with exceptional toughness, nanocoatings, nano piezo-electric materials etc. Prof Murty, during his lecture, further explained the working principle of Atom Probe Tomography and high entropy alloys.

The 32nd Dr Ajudhia Nath Khosla Memorial Lecture

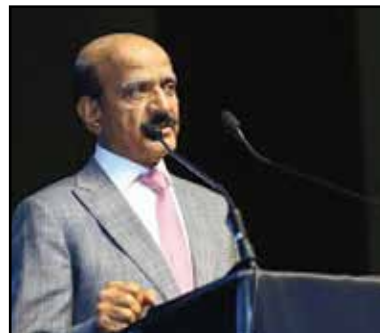


Dr A N Khosla Memorial Lecture was instituted in the year 1988 in the memory of Late Dr Ajudhia nath Khosla, an outstanding Engineer-Administrator and the Past President of The Institution of Engineers (India). The 32nd Dr A N Khosla Memorial Lecture was delivered by Mr Martin Manuhwa, President, Federation of African Engineering Organisation (FAEO) on the theme

'The Impact of Engineering Institutions Cooperation in Capacity Building and Anti-Corruption for Sustainable Projects Delivery: Models and Imperatives for the Developing World Society'. During his thought provoking speech, the speaker focused on engineering for sustainable development, FAEO pathways in creating the capacity building initiatives, role of engineering and other technological interventions to meet Science, Technology & Innovation Strategy for Africa (STCIA), 2024. The speaker discussed further regarding infrastructural challenges in engineering in terms of energy requirement, development in surface transport and airlines, agriculture and rural development, higher education and so on. Mr Manuhwa stressed on eradication of infrastructural corruption and recommended to develop a sustainable framework to reduce corruption practices in infrastructural projects.

The 9th Prof C S Jha Memorial Lecture

Prof C S Jha Memorial Lecture was instituted in the year 2011, in the



memory of Late Professor Chandra Sekhar Jha, an eminent engineer and educationist. The 9th Prof C S Jha Memorial Lecture was delivered by Mr BVR Mohan Reddy, Executive Chairman, CYIENT, Hyderabad on the theme, 'The 4.0 Paradigm and Technical Education'. During his address, Mr Reddy lucidly explained the major shift in learning process step by step, starting from ancient

Gurukul, embracing the knowledge of the teacher, introduction of printed books as a major study resource, transmission of classroom lectures through television programmes in rural and remote areas followed by a Learning Ecosystem, when technology enabled students to access the best learning resource all over the world. Mr Reddy opined that three major changes, namely Industry 4.0, Education 4.0 and Globalization 4.0 are taking the world by storm and are bringing about tectonic shifts to learning, that leads to a paradigm shift in higher education system. Mr Reddy highlighted the core issues in engineering education, which include; updation of curriculum on periodic basis; regular training and development of teachers for future technologies; continuous reworking on pedagogy; enhanced technology supportive learning; industry-connect and apprenticeship programmes; innovation, incubation and entrepreneurship; and R&D Clusters.

The 5th Dr K L Rao Memorial Lecture

Dr K L Rao Memorial Lecture was instituted in the year 2015, in the memory of late Dr Kanuru Lakshmana Rao, an eminent Civil Engineer, former Union

Minister of Government of India and Past President of The Institution of Engineers (India). The 5th Dr K L Rao Memorial Lecture was delivered by Prof S S Chakraborty, Chairman, TransAsia Infrastructure (India) Private Limited, New Delhi. During his address, Prof Chakraborty explained the significance of societal engineering and mentioned that engineers are in the forefront



of every walks of life to apply their specific knowledge for solving social problems and provides the necessary artifacts including shelter, energy, communications, manufacturing, water supply, use of natural resources and scientific disposal of wastes. The speaker explained the scopes, prospects and challenges of core sectors including agriculture, infrastructure, water crisis and river systems, dams, barrages and embankments, energy utilization, advancement of technologies in healthcare and life sciences and so on.

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and noted during the Annual General Meeting. Thereafter, the ceremonial function of installation of New President of IEI took place where Er Narendra Singh took over the charge from Dr T M Gunaraja as the President of the Institution of Engineers (India) for the session 2019-20 and delivered the Presidential Address. Er Narendra Singh presented the Scroll-of-Honour to Dr T M Gunaraja, Immediate Past President in recognition to the devoted

contributions and selfless services rendered by him in the high Office as the President of The Institution of Engineers (India) for the Session 2018-19.

During Valedictory Function, Hon'ble Governor of Himachal Pradesh, Mr Bandaru Dattatreya graced the occasion as Chief Guest. During his address, Hon'ble Governor mentioned about the new advent of STEM (Science, Technology, Engineering and Mathematics), enhanced

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34th Indian Engineering Congress, Hyderabad

IEI's

Best Centre Award



Telangana State Centre



Durgapur Local Centre

The **Telangana State Centre** and **Durgapur Local Centre** of the Institution have been adjudged the 'Best Centres' for their all-round performance during the year 2018-2019. The awards, comprising trophies and the certificates along with cash awards were given away to the respective Centres at the 100th Annual General Meeting of the Institution held at Hyderabad on December 29, 2019.

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

SAIL Award

For the year 2019, **S K Dutta** for his paper titled '*Scrap Supplements and Alternative Iron Making*'.



S K Dutta

Dr M Visvesvaraya Award



S Acharyya

For the year 2019, **S Acharyya, Subhra Dhara, G M Chowdhury** and **M K Singh** for their paper titled '*Technology Strategy for Improved Safety Management in Steel Industry*'

For the year 2019, **Balakrishnan Nair** for his paper titled '*Technology Strategy for Improved Safety Management in Steel Industry*'



Balakrishnan Nair

H Nandy Memorial Award



The Institution of Engineers (India) instituted the Award in the name of Late H Nandy, renowned Council Member, a doyen and eminent engineer in the field of Metallurgical and Materials Engineering and to be given away to a student who tops the list of Section B Examination of the Institution in the branch of Materials & Metallurgical Engineering, considering both Summer and Winter examinations for the year 2018, **Mr Nand Kishor** was selected for the award.

The Coal India Ltd (CIL) had instituted an Award to perpetuate the memory of Late J G Kumaramangalam, its first Chairman, to be awarded every year during the Indian Engineering Congress to author/s of the articles adjudged best on a selected topic.

Coal India (J G Kumaramangalam Memorial) Award

For the year 2019, **Prakash Gupta** and **Palash Banerjee** for their paper entitled '*Challenges in Large Open Cast Mine in respect of Production, Safety & Green Mining Initiatives and Way Forward*'.



Mr Prakash Gupta

Societal Engineering – Imperatives for Nation Building

Contd. from page 7

application of information technology, more research and development, global competitiveness to improve the standards of the products and services. Dr T M Gunaraja, Immediate Past President, IEI introduced the audience about Er Narendra Singh, President, IEI. President, IEI, further addressed the audience. Chairman, Technical Committee, Dr S Satyanarayana briefed the audience regarding the Technical Sessions of the Congress. On this auspicious occasion, 'Abhiyanta Bandhu', the Annual Technical Magazine for the year 2019 published under the aegis of National Languages Promotional Committee (NLPC) of IEI along with Annual Technical Volumes of Civil, Architectural, Aerospace, Production, Mechanical Engineering Divisions and Interdisciplinary Coordination Committee, were released by the Hon'ble Chief Guest and other dignitaries present on the dais. Earlier, Dr G Rameshwar Rao, Chairman, Telangana State Centre welcomed the august audience. Mr T Anjaiah, Honorary Secretary, Telangana State Centre proposed the vote of thanks.

Recipients of IEI Prizes & Awards

One of the important events of the Congress was the presentation of prizes and awards to the authors whose papers were published in the Journals of The Institution of Engineers (India) & co-published by Springer during the year 2018 and were adjudged the best in respective fields. Details of prizes and awards, the titles of the winning papers along with the authors' names are listed hereunder.

The President of India Prize

Shikha Singh, Bhim Singh, G Bhuvaneswari and V Bist for their paper titled '*Unity Power Factor Operated PFC Converter Based Power Supply for Computers*', **Journal of The Institution of Engineers (India): Series B, Issue 1, Volume 99, 2018.**



E P Nicolaides Prize

S K Kirthika and S K Singh for their paper titled '*Experimental Investigations on Basalt Fibre-Reinforced Concrete*', **Journal of The Institution of Engineers (India): Series A, Issue 4, Volume 99, 2018.**



The Institution Prizes (2 Nos.)



Ritesh D Lokhande, V M S R Murthy, K B Singh, Chandan Prasad Verma and A K Verma for their paper titled '*Numerical Modeling of Pot-Hole Subsidence Due to Shallow Underground Coal Mining in Structurally Disturbed Ground*', **Journal of The Institution of Engineers (India): Series D, Issue 1, Volume 99, 2018.**



Md Arif Mahmud for his paper titled '*Development of Modified Starch Coated Jute Fabric*', **Journal of The Institution of Engineers (India): Series E, Issue 2, Volume 99, 2018.**

Union Ministry of Water Resources Department of Irrigation Prize



Abinash Mohanta and K C Patra for their paper titled '*LES Modeling with Experimental Validation of a Compound Channel having Converging Floodplain*', **Journal of The Institution of Engineers (India): Series A, Issue 3, Volume 99, 2018.**

Union Ministry of Energy – Department of Power Prize

Elizabeth Cherian, G R Bindu and PS Chandramohan Nair for their paper titled '*A Hybrid ac/dc Low Voltage Distribution Network for Improved Harmonics Management and Energy Conservation*', **Journal of The Institution of Engineers (India): Series B, Issue 6, Volume 99, 2018.**



K F Antia Memorial Prize



M Sathiyamoorthy and Madhavi Ganesan for their paper titled '*Delineation of Groundwater Potential and Recharge Zone Using Electrical Resistivity Method Around Veeranam Tank, Tamil Nadu, India*', **Journal of The Institution of Engineers (India): Series A, Issue 4, Volume 99, 2018.**

Sir Arthur Cotton Memorial Prize



R Balagopal, N Prasad Rao, R P Rokade and P K Umesha for their paper titled '*Experimental Investigations on Strengthening of Bolted Connections in Transmission/Communication Towers*', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**

Sir Rajendra Nath Mookerjee Memorial Prize

Abanti Datta, Kalyan Prasad Sinhamahapatra for their paper titled '*Investigation of the Influence of Convective Mach Number on Compressible Plane Jet Exhausting into Parallel Streams*', **Journal of The Institution of Engineers (India): Series C, Issue 4, Volume 99, 2018.**



Corps of Engineers Prize

Pratik Ranjan Chaurasia and Subhash for their paper titled '*A Low-Cost Indigenous Intervention which has Revolutionized the Drilling Technology and Changed the Life of Millions of Farmers in the State of Uttar Pradesh, India*', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**



The Institution Prize [Donated by Col G N Bajpai]



Sandeep Rangrao Desai and Sampat Pavitran for their paper titled '*The Effect on Fin Pitch on Fluid Elastic Instability of Tube Arrays Subjected to Cross Flow of Water*', **Journal of The Institution of Engineers (India): Series C, Issue 1, Volume 99, 2018.**

Pandit Madan Mohan Malaviya Memorial Prize



Subhadeep Bhattacharjee and Subhojit Mohanta for their paper titled '*An Inclusive Investigation of Conceivable Performance of Rice Straw Incinerated Electricity Generation*', **Journal of The Institution of Engineers (India): Series B, Issue 3, Volume 99, 2018.**

Sir Thomas Ward Memorial Prize

Parimala P and J R Raol for their paper titled '*Image-Centroid Tracking with Fuzzy Nonlinear Function of Residuals Based Observer*', **Journal of The Institution of Engineers (India): Series B, Issue 5, Volume 99, 2018.**



The Railway Board's (First) Prize

S K Mandal, A K Ghosh and S Oraon for their paper titled '*Controlled Blasting for Deconstruction of a Railway Bridge Near Sahibganj*', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**



The Railway Board's (Second) Prize

Krishnendu Mondal and Santanu Das for their paper titled '*An Investigation on Machinability during Turning Hardened Steel in Dry Condition*', **Journal of The Institution of Engineers (India): Series C, Issue 6, Volume 99, 2018.**



Shrimati Saroma Sanyal Memorial Prize

B G Gupta, K M Agrawal and Jayanta Kumar Biswas for their paper titled 'Conservation of Ground Water at Maheshtala Bleaching and Dyeing Cluster, a Populated Area in West Bengal, India by Implementing Ultra filtration and Reverse Osmosis Based Effluent Treatment Plant – A Case Study', **Journal of The Institution of Engineers (India): Series A, Issue 4, Volume 99, 2018.**



Suchit Kumar Ghosh Memorial Prize

Abey E Thomas for his paper titled 'Effects of Irregular Bridge Columns and Feasibility of Seismic Regularity', **Journal of The Institution of Engineers (India): Series A, Issue 3, Volume 99, 2018.**



Agricultural Engineering Division Prize



Rudragouda Chilur and Sushilendra Kumar for their paper titled 'Design and Development of Maize Dehusker cum Sheller : A Technology for Northern Transition Zone of Karnataka, India', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**

Marine Engineering Division Prize

K Venkatasubbaiah, K Narayana Rao, M Malleswara Rao and Suresh Challa for their paper titled 'Performance Evaluation and Modeling of Container Terminals', **Journal of Institution of Engineers (India): Series C, Issue 1, Volume 99, 2018.**



Nawab Zain Yar Jung Bahadur Memorial Prize

Alok Kumar Gupta and Bharat A Modi for their paper titled 'Selection of Sustainable Technology for VOC Abatement in an Industry: An Integrated AHP-QFD Approach', **Journal of The Institution of Engineers (India): Series A, Issue 3, Volume 99, 2018.**

Hindustan Zinc Limited Prize

Bhanu Chander Balusa and Jayanthu Singam for their paper 'Underground Mining Method Selection Using WPM and PROMETHEE', **Journal of The Institution of Engineers (India): Series D, Issue 1, Volume 99, 2018.**



N K Iyengar Memorial Prize

Pandaba Patro, Ani Rout and Ashok Barik for their paper titled 'Numerical Heat Transfer Prediction for Laminar Flow in a Circular Pipe with a 90° Bend', **Journal of The Institution of Engineers (India): Series C, Issue 3, Volume 99, 2018.**



Metallurgical and Materials Engineering Division Prize

N Gayathri and Paramita Mukherjee for their paper titled 'Study of Initial Stages of Ball-Milling of Cu Powder Using X-ray Diffraction', **Journal of The Institution of Engineers (India): Series D, Issue 1, Volume 99, 2018.**

Production Engineering Division Prize

Snehashis Sarkar, Santanu Das, Soumya Sarkar and Probal Kumar Das for their paper titled 'Machining Performance of Hot-Pressed Carbon Nanotube Reinforced Alumina Cutting Tool Insert', **Journal of The Institution of Engineers (India): Series C, Issue 6, Volume 99, 2018.**



Brij Mohal Lal Memorial Prize

Hassan Irtaza and Ashish Agarwal for their paper titled 'CFD Simulation of Turbulent Wind Effect on an Array of Ground-Mounted Solar PV Panels', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**



Prof R C Singh Prize



Upendra D Patel, Jayesh Ruparelia and Margi Patel for their paper titled 'Biodegradation of a Real Dye Wastewater Containing High Concentration of Total Dissolved Inorganic Salts (TDIS) in a Lab-Scale Activated Sludge Unit', **Journal of The Institution of Engineers (India): Series A, Issue 1, Volume 99, 2018.**

Corps of Electrical and Mechanical Engineers Prize

Vimal Kumar Pathak, Amit Kumar Singh, M Sivadasan and N K Singh for their paper titled 'Framework for Automated GD&T Inspection Using 3D Scanner', **Journal of The Institution of Engineers (India): Series C, Issue 2, Volume 99, 2018.**

Dr Jai Krishna Prize

Vivek Hirave and Mahesh Kalyanshetti for their paper titled 'Seismic Response of Steel Braced Building Frame Considering Soil Structure Interaction (SSI): An Experimental Study', **Journal of The Institution of Engineers (India): Series A, Issue 1, Volume 99, 2018.**

Dr Rajendra Prasad Memorial Prize

Ravi Varma Rambha and T X Ren for their paper titled 'Investigation into the Propensity of Coal for Spontaneous Heating in Stockpiles', **Journal of The Institution of Engineers (India): Series D, Issue 2, Volume 99, 2018.**

Dr Triguna Charan Sen Prize

Mostafa Youssefi and Banafsheh Safaie for their paper titled 'The Study on the Mechanical Properties of Multi-walled Carbon Nanotube/Polypropylene Fibers', **Journal of The Institution of Engineers (India): Series E, Issue 1, Volume 99, 2018.**

Aerospace Engineering Division Prize

Ramakrishnan Balasubramanian and Karupannasamy Anandhanarayanan for their paper titled 'Development of an Ideal Magnetohydrodynamics Flowsolver for High Speed Flow Control', **Journal of The Institution of Engineers (India): Series C, Issue 5, Volume 99, 2018.**



Tata Rao Prize

K P S Rana, Veneet Kumar and Tapan Prasad for their paper titled 'Enhancing Linearity of Voltage Controlled Oscillator Thermistor Signal Conditioning Circuit using Linear Search', **Journal of Institution of Engineers (India): Series B, Issue 3, Volume 99, 2018.**

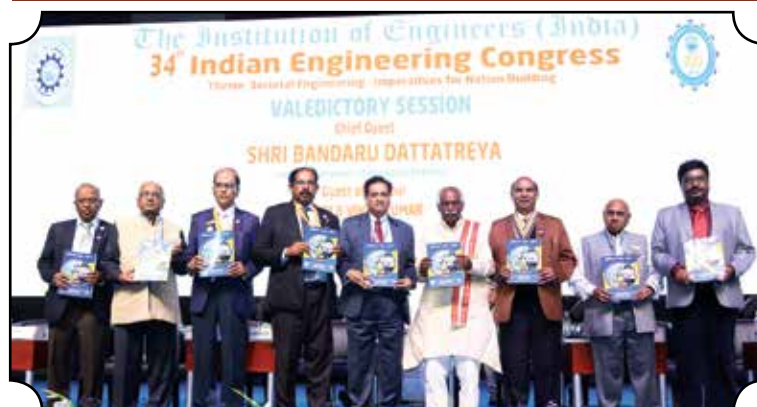
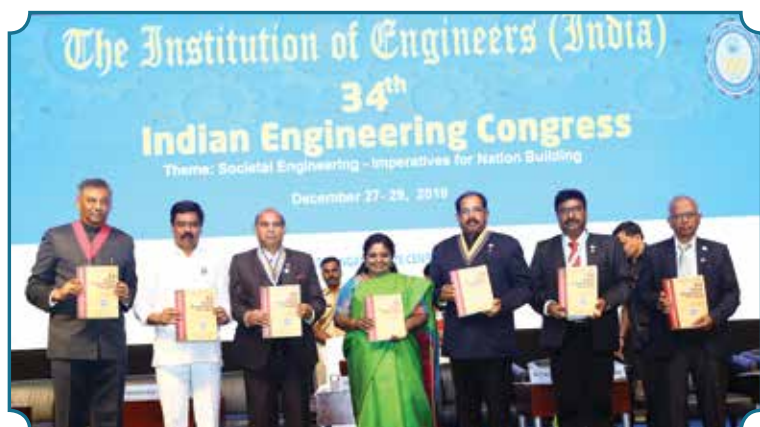
Rekha Nandi and Bhupesh Nandi Prize



P Rai, N Gautam and H Chandra for their paper titled 'Investigating Electrostatic Precipitator Design Parameters for Efficient Control of Particulate Matter in Thermal Power Plant: A Case Study', **Journal of The Institution of Engineers (India): Series A, Issue 2, Volume 99, 2018.**

Release of Technical Volume of the Congress

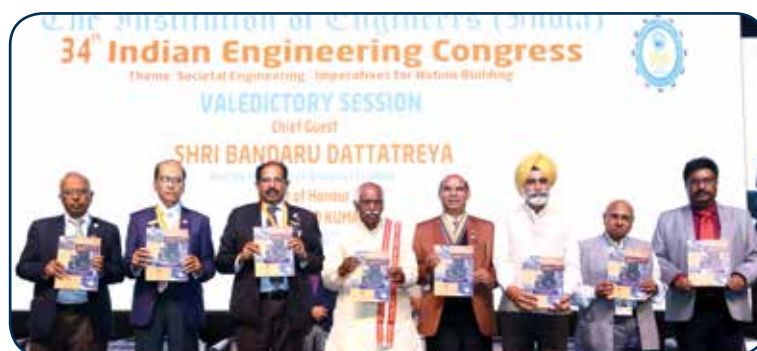
Release of Abhiyanta Bandhu



Release of Annual Technical Volume of Engineering Divisions



Architectural Engineering Division



Mechanical Engineering Division



Aerospace Engineering Division



Production Engineering Division



Civil Engineering Division



Interdisciplinary

NDRF Design Awards 2019

National Design Award



Dr V Narayanan

Director, Liquid Propulsion System Centre
Indian Space Research Organisation, Trivandrum

The National Design and Research Forum (NDRF) – an Autonomous Forum of the IEI, had instituted these awards with a view to promote advancement of engineering design and to facilitate exchange of ideas on its different aspects. During the 34th Indian Engineering Congress held at Udaipur, following Design Awards for the year 2019 were presented.

Environmental Engineering Design Award



Dr C Anandharamakrishnan

Director, Indian Institute of Food Processing Technology,
Ministry of Food Processing Industries, Govt. of India,
Thanjavur, Tamil Nadu

Architectural Engineer- ing Design Award



Dr Ashok Kumar

Chief Scientist & Head, Architecture & Planning
CSIR - Central Building Research Institute, Roorkee

Mechanical Engineering Design Award



Dr N Kishore Nath

Scientist – G, Project Director, VEDA
Advances Systems Laboratory, DRDO, Hyderabad

Suman Sharma Award



Dr Chitra Rajagopal

Distinguished Scientist & Director General,
Resource & Management, DRDO, New Delhi

Safety and Quality Award



Mr S P Garg



Mr Pradeep Kumar Parmar

Safety Award and Quality Award were instituted by the Safety and Quality Forum (SQF) of the Institution with a view to encourage professionals from manufacturing and service sectors to strive for excellence. For the year 2019, **Mr S P Garg**, Executive Director, Head Corp HSE Department GAIL (India) Limited received the Safety Award and **Mr Pradeep Kumar Parmar**, Chief Engineer (Flyover) PWD, Govt. NCT received the Quality Award.

WMF Award



Conservation of Water Award was instituted by the Water Management Forum (WMF) for Best Contribution towards Conservation of Water in Individual. For the year 2019, **Prof M V S Giridhar**, Centre for Water Resources, Institute of Science & Technology, Jawaharlal Nehru, Technological University, Hyderabad received the award.

Visionary Talk



Prof GONG Ke, President
World Federation of Engineering
Organizations, (WFEO)

Mr A Ayodhya Rami Reddy
Chairman, Ramky Group



Dr H Sarvothaman
Former Deputy Director General,
Geological Survey of India,
Hyderabad

Award for Abhiyanta Bandhu



First Best Paper Award
Dr Smita Pareek



Second Best Paper Award
Mr Rajendra Sothwal
&
Mr Sudarshan Kumar Popli



Third Best Paper Award
Mr Praveen Kumar

Synthesis, Characterization and Application of Nanomaterials

West Bengal State Centre of the Institution organized International Conference on 'Synthesis, Characterization and Application of Nanomaterials' under the aegis of Metallurgical and Materials Engineering Division Board (MMDB) of IEI during November 1-2, 2019 at Kolkata. Prof Marc Madou, Chancellor's Professor, University of California at Irvine, USA graced the occasion as Chief Guest and inaugurated by lighting the Lamp. Prof Parthasarathi Chakrabarti, Director, Indian Institute of Engineering Science and Technology, Shibpur, Howrah graced the occasion as Guest-of-Honour. Prof Chakrabarti highlighted that proper review may be done on the State-of-Art of current happenings in technological development from time to time, which leads for the beneficial of young researchers. He spoke about nanotechnology from Electronics Engineer's point of view and mentioned that Si continued to rule the electronics industry since post

Shapes, Microstructure and Function" and highlighted on various aspects of controlling microstructure and functionality of carbon, Electrospinning, Carbon Micro Electromechanical System (C-MEMS) fabricated by pyrolyzing carbon-rich polymer shapes, Elastocapillary-based origami fabrication process, Shape optimization strategy, Nanowire patterning through Field electrospinning and many other allied areas. During the session, Mr Sisir Kumar Banerjee, Immediate Past President, IEI, Prof Samiran Choudhuri, Past President, IEI, other Council Members of IEI and various scientists, researchers & Corporate Members of IEI graced the occasion. The inaugural session ended with the concluding remarks delivered by Maj Gen (Dr) S Bhattacharya, VSM (Retd), Secretary & Director General of the Institution.

During the valedictory session, Prof Hans-Jörg Fecht, Chaired Professor and Director, Institute of Functional Nanosystems, Ulm University, Germany

graced the occasion as Chief Guest. Dr B K Sarkar, former Director, CSIR-CGRI, Kolkata was the Special Guest and Dr Sri Bandyopadhyay from University of New South Wales, Australia was the Guest-of-Honour. The Chief Guest, Prof Fecht briefed the holistic view of nanomaterials and its characterisation. Dr Sarkar also congratulated the participants from various parts of the country. Dr Sri Bandyopadhyay also congratulated the Institution for hosting the 2nd phase of SCAN Conference after more than one decade. Earlier, Prof N R Bandyopadhyay, Chairman, MMDB &

Chairman of Scientific Committee of the Conference welcomed the august gathering. During the session, Best Oral Presenter and Best Poster Presenter have been Awarded by the dignitaries. Also, the Certificates of Participation were delivered to the presenters. The vote of thanks was delivered by Mr K P Das, Honorary Secretary of the Centre at the end of the valedictory session.

The following recommendations have been emanated from the Convention:-

Conference highlighted emerging issues in synthesis and characterisation of new and advanced materials and its reaching consequences; Various breakthroughs in material science and engineering and its impact on our society and Science, technology, engineering, mathematics (STEM) education; Development of new materials is an essential part in its attempt to resolve the praising environmental problems haunting human civilisation; Materials Science and Engineering has new intervened at the electronic atomic and molecular structure of matters to synthesize new materials and explore its application; Over the past two decades, scientist and engineers have mastered the art of working with nanoscale materials exhibiting new properties and application which are different from their bulk properties.



second World War. Prof Chakrabarti also highlighted on the advent of nanoscience, which is in an attempt to miniaturizing the things and developing complementary materials that perhaps work in an uninterrupted manner, which led to the development of micro and nano-electronic devices and finally Si gave way to Graphene and CNT. The program was presided by Dr T M Gunaraja, President of IEI and congratulated the Centre for organising such big program on the occasion of Centenary Celebration of IEI. Further, President also highlighted various other programmes organised by IEI for the last few months. On this occasion, Dr Sri Bandyopadhyay from University of New South Wales, Australia and Chairman of International Advisory Committee of the Conference also graced the occasion and focused on the latest happenings on nanomaterials. Earlier, Mr Sandip Kumar Deb, Chairman of the Centre welcomed the august gathering. During the inaugural function, Prof N R Bandyopadhyay, Chairman, MMDB and also Chairman of Scientific Committee of the Conference elaborated described the background of the theme. On this occasion, a "Book of Abstract" of the Conference was released by the dignitaries. The Chief Guest, Prof Madou delivered his Inaugural Plenary address on "Controlling Carbon 3D

Inauguration of New Centre of IEI

The **Kothagudem Local Centre** was inaugurated as the 125 th Centre of the Institution at the premises of Old Planning Project Conference Hall, near Singareni Collieries Head Office, Kothagudem 507101, Badradri, Telangana at a well attended function on 24 December 2019. The first Chairman and Honorary Secretary of Kothagudem Local Centre are Mr K Laxminarayana, FIE and Mr Sk Fasiuddin, AMIE respectively.



Re-engineering of Buildings

Trichur Local Centre of The Institution of Engineers (India) hosted the Thirty-fifth National Convention of Architectural Engineers and National Conference on 'Re-engineering of Buildings' during December 7-8, 2019 at DASS Continental Hotel, Thrissur. Dr T M Gunaraja, the then President, IEI graced the inaugural function as Chief Guest. Dr. Gunaraja, in his address spoke about the challenges faced by the building Industry and architectural engineering. He also highlighted various efforts being undertaken by IEI to ensure greater mobility of the engineers in other countries. Mr. H. K. Mittal Chairman, ARDB, IEI, presided over the inaugural function. During his address Mr. Mittal described the growing importance of Re-engineering process in construction field. He also stressed the need for strengthening the Architectural Engineering Division of the Institution. He opined that architectural engineers have a greater role to play in achieving customer satisfaction and environmental protection. During the occasion, Prof V.K.Lakshmanan Nair, Advisor Kerala State Nirmithi Kendra, Mr. Sandip Kumar Deb, Vice President, Institution of Valuers and Mr H.Narayana Swamy, Former Chief Engineer, Kerala PWD were felicitated as Eminent

A State of the Art Lecture was presented by Prof V K Lakshmanan Nair, Former Professor, Civil engineering and currently advisor to Kerala State Nirmithi Kendra warned against over exploitation of natural resources which is the cause of increased waste generation and its adverse effect on environment. Number of papers from industry, practitioners and academia were presented and discussed during the technical sessions of the two-day National Conference. Varied topics like retrofitting of buildings, use of alternate materials, prefabricated and pre-engineered buildings, health, & safety, design to resist natural hazards, environmental efficiency, post disaster waste management, application of principles of traditional Vastu, were discussed. Papers were presented on the topics, namely Re-engineering and Capacity Expansion; Architectural Engineering Aspects of Tribal Housing; Civil Construction for processing Dairy Products, Cattle feed and Bio Secure Labs; Planning and Re-Engineering Building Requirements of Industrial Buildings to resist natural and fire Hazards; Role of Prefabricated Steel buildings; Pre-Engineered Eco-friendly Homes; Habitable Bridge- Redefining Conventional Urban Bridges; Application of Compacted Earth and Lime Matrix for Construction of Buildings; Application of Vastu in Modern Building; Urban Indicators for Environmental Efficiency; Post Disaster Waste Management.; Health and Safety in Construction Industry. During the National Conference, Prof C. Raveendranath, Hon'ble Minister for General Education, Government of Kerala visited the venue and graced the occasion. Hon'ble Minister spoke on the necessity for moulding the engineering education, human centric, in order to have good engineers as well as good human beings for serving the society. During Valedictory Function, Mr Pranab .Kumar .Maity, Member, ASDB and Mr A S Kodanda Pani were present and addressed the audience, highlighting the importance of re-engineering. Prof. V. A. Sudhakaran, Member, Technical Committee presented a brief summary of Conference Proceedings and the recommendations of the Conference. Earlier, Mr T R Krishnan, Convener welcomed the audience. Mr. N. K. Sadanandan, Convener, organising committee proposed vote of thanks.

Following recommendations emanated from the two-day National Conference



Engineers for their outstanding contributions in the field of Architectural engineering. Dr. P. C. Madhuj, Visiting Faculty, MIT Manipal was also felicitated on this occasion. Mr. Navneeth Munoth, Assistant Professor, MANIT, Bhopal and Dr. Neha Gupta, Architect, Delhi Metro Rail Corporation, were presented with prestigious IEI Young Engineers Award for their contribution in the field of Architectural Engineering by the Chief Guest. Mr. K. K. Gopalakrishnan Nair, and Dr. M. P. Sukumaran Nair, Council Members, IEI, were also present in the occasion and addressed the audience. During the occasion, a Technical volume of the Conference was released by the Chief Guest and other dignitaries present on the dais. Earlier, Er. V. G. Sankaranarayanan Chairman, Trichur Local Centre, welcomed the audience. Mr T. R. Krishnan, Convener, presented the theme of the Conference. Mr. Sasidharan Achari, Organising Secretary, proposed vote of thanks. The prestigious T. S. Narayana Rao Memorial Lecture was delivered by Dr. P. Gireesan, Superintending Engineer, Kerala Water Authority on the theme 'Re-engineering of Buildings - An Exploration into Timber Technology'.

Suitable mechanism should be developed to introduce Re-Engineering concepts at all levels of building construction right from concept, planning, site selection, material, labour, construction safety, associated services and maintenance; Systems should be developed for the application of the above mentioned processes for all types of buildings-residential, public, commercial, and recreational; Site specific modifications should be incorporated in the basic system framework to deal with emergency situations like flood, earth quake etc.; Use of locally available materials should be encouraged to reduce cost of construction; Attempts should be made to use prefabricated structures wherever practicable, especially at the time of emergency; Engineering course curriculum should highlight Re-Engineering of buildings concept with stress to the ecofriendly, energy efficient, and functionally fit structures and for sustainable development; Building rules and codes should be amended to reflect the use of re-engineering principles; The idea of Re-engineering should be given Wide publicity through print and visual media so that public awareness and participation can be ensured in realising the concepts.

Superannuation from IEI

Mr Nikhilesh Chakraborty, an employee of the Institution HQ will be superannuated from the services of IEI on January 31, 2020. He joined the Institution on July 1, 1985 and rendered his services to the Institution for a period of over 34 years.

IEI wishes Mr Nikhilesh Chakraborty and his family a happy and healthy life in future.



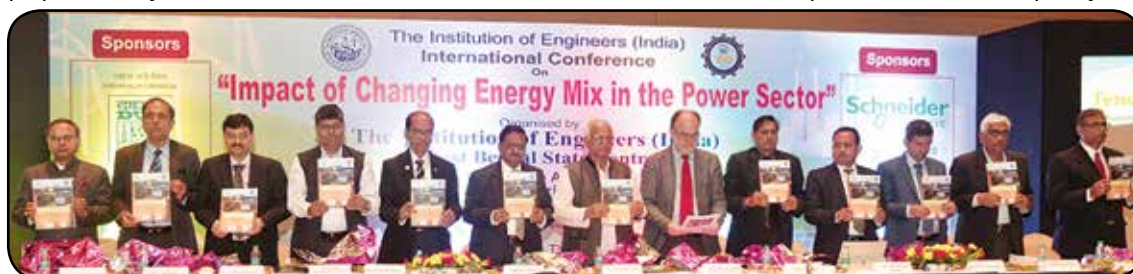
Impact of Changing Energy Mix in the Power Sector

The **West Bengal State Centre** of The Institution of Engineers (India) organized the International Conference on "Impact of Changing Energy Mix in the Power Sector", under the aegis of Electrical Engineering Division Board, IEI in association with Techno India University and University of Johannesburg, South Africa at Lalit Great Eastern, Kolkata on November 23-24, 2019. Mr. Sobhandeb Chattopadhyay, Hon'ble Minister of Power, Government of West Bengal graced the occasion as the Chief Guest. Mr. Chattopadhyay, during his address recommended generation and application of clean energy from solar, hydro and tidal resources for a sustainable environment. Mr. Rabi Chowdhury, Managing Director (Generation), CESC Limited; Mr. Gopal Singh, CMD, Central Coal Fields Limited; Mr. Sutirtha Bhattacharjee, IAS (Retd), Chair Person, West Bengal Electricity Regulatory Commission (WBERC); Hon'ble Justice S D Mukhopadhyaya, Chair Person,

Mr. Dinesh Kumar Ghimire, Secretary, Ministry of Energy, Water Resources and Irrigation, Govt. Of Nepal, in his address stressed on the change of economy of Nepal and in a nutshell briefed about power generation in Nepal and mentioned that power energy is the driver to economic growth. The Key note address was delivered during the occasion by Prof Pretorius, University of Johannesburg. Mr Sisir Kumar Banerjee, the then Immediate Past President, IEI in his address mentioned that India is taking significant steps towards clean energy initiative. Mr Banerjee mentioned that as a part of its International commitment, India has put forward eight nationally determined contributions (NDC) under the Paris agreement of UNFCCC (United Nations Frame Work Convention on Climate Change). One of the eight NDCs to be met by 2030 is to generate 40% of electric power from non-fossil fuels. Mr. R R Tanwar, the then Chairman, ELDB, IEI deliberated on future of India in power sector and projected that India is set to be at the centre stage of the world's energy map and is set to contribute more to the projected rise in overall global energy demand. He also mentioned that, climate change will be a major challenge and with India's population and GDP expected to grow in future, energy demand will see a significant rise with associated Green House Gas (GHG) emissions as well. Earlier, Mr Sandip Kumar Deb, Chairman, West Bengal State Centre and Council Member, IEI welcomed the august gathering. Mr. Kalipada Das, Honorary Secretary, West Bengal State Centre proposed the Vote of Thanks. Followed by Inaugural Session, there were two Plenary Lectures. The session was Chaired by Prof (Dr) Samiran Choudhuri, Past President, IEI. The Chairman during his address mentioned that purpose of the Conference is to highlight the issues related to the

changes that the country is going to experience i.e. the shift from fossil fuel to clean and sustainable renewable sources of energy. Mr Kulman Ghising, Managing Director, Nepal Electricity Authority, during his Plenary Lecture, spoke different aspects of electricity generation and consumption in SAARC countries and also on energy generation scenario in Bangladesh, hydro power potential of Bangladesh-Bhutan-India-Nepal initiative, cross border power transfer, power market integration initiatives, multipurpose application of Nepal water resources, reservoir projects, climate change mitigation and changing energy mix for energy transmission from fossil fuel to clean source of energy. Mr. Nirmalendu Chatterjee from Jadavpur University, during his Plenary address spoke on the extreme necessity of reducing CO₂ and also projected a critical assessment of the emerging scenario as a paramount importance for the sustainable development of the power sector. Another Plenary Session was chaired by Mr. Joydeb Bandyopadhyay, Member Secretary, Eastern Regional Power Committee, CEA, Government of India and the august speakers during the session were Mr. Satyakam Basu, Chairman & Managing Director, Samshi Group of Companies and Mr. Surajit Basu of West Bengal Power Development Corporation Limited. A Business Session was also organized in this occasion, where several industries participated and exchanged their expertise. Schneider Electric deliberated on sustainability of power producers after reduction of emission intensity of GDP by 30-35% by 2030, resulting in possibility of high economic growth with low per capita energy uses. They also spoke on advanced distribution management system (ADMS) and also micro grid management. During technical sessions, approximately 25 papers were presented on contemporary issues, that include; reliability and security

in smart power grid, random grid based visual secret sharing, multi area power system network, Discrete design optimization of three phase induction motors using standard laminations, solar energy mix in power generation, Judicious use of conventional and



Contd. on page 26

IEI Celebrates Energy Conservation Day

The Institution of Engineers (India) celebrated Energy Conservation Day all over the country on December 14, 2019. Brief account of the celebration as received from various Centres are reported hereunder.

STATE CENTRES

Andhra Pradesh

Mr A Chandrasekhara Reddy, CEO & Managing Director, AP State Energy Conservation Mission, Vijayawada, graced the occasion as the Chief Guest and delivered the Keynote Address. While speaking on the topic 'Significance of Energy Efficiency & Energy Conservation for the Welfare of Society', Mr Reddy highlighted the initiatives undertaken by the State Government on energy conservation in agriculture, commercial complexes & residential buildings, industries, etc. He also emphasized on energy savings through enhanced implementation of LED Pilot Projects and conservation of water. Dr K Giri Babu, Principal, Vasireddy Venkatadri Institute of Technology, (VVIT), Guntur Dist and Mr V Vidya Sagar, Chairman, VVIT were present during the occasion and addressed the audience. Earlier, Dr K Hemachandra Reddy, Chairman, AP State Centre, delivered the welcome address.

Bihar

Mr T Pandey, Managing Director, Bihar Grid Company Ltd. and Mr Ranjan Pandey, Bihar State Hydroelectric Power Corporation Limited graced the occasion as the Chief Guest and Guest-of-Honour respectively. Prof Alok Kumar, delivered the keynote address on the theme 'Initiatives in Conservation of Energy' and explained the concept of energy conservation and its scientific importance in a candid manner. He further explained different dimensions of energy conservation in the context of sustainable energy. Earlier, Mr Nishi Kant Prasad Sinha, Chairman, Bihar State Centre and Council Member, IEI, in his welcome address mentioned that it is an opportunity to share the ideas and activities for conserving energy and its utilization to the optimum level in order to save it for future generation. Mr B N Singh, Past Honorary Secretary of the Centre proposed the vote of thanks.

Delhi

The Chief Guest of the function, Col Hardeep Sodhi (Retd.), Member, IEI narrated that the conservation of energy will reduce the expenses related to fossil fuels which are very expensive and therefore, consumers are required to pay higher prices for goods and services. 'Energy conservation would certainly reduce the amount of fossil fuels being mined and this, in turn, would reduce the costs to consumers', Col Sodhi opined. Mr R N Rajpoot, Chairman, Safety & Quality Forum, IEI also graced the occasion and addressed the august gathering. Earlier, Mr Dinesh Kumar, Chairman of the Centre, in his welcome address elaborated about the Energy Conservation Act in India which aims to employ the professional, qualified and energetic managers as well as auditors managing the energy, projects, policy analysis, finance maintaining the energy efficiency

projects. He further stated that the day is celebrated to make people aware about the importance of energy as well as saving or conserving the more energy by using less energy. Mr Jitendra Kumar Sharma, Honorary Secretary of the Centre proposed the vote of thanks at the end of the programme.

Gujarat

The Keynote Speaker on the occasion, Dr Umang Patdiwala, Head of the Department, Department of Mechanical Engineering, Indus Institute of Technology & Engineering, INDUS University, Ahmedabad, spoke on the theme 'Energy, Types, Application & Conservation' and explained energy & application, types of different energy resources, energy conservation etc. He further explained different non-renewable and renewable Energy resources with its advantages and disadvantages and cost effectiveness. He enumerated the importance of energy conservation as natural resources which are very limited. 'We need to make energy conservation habit which ultimately reduces pollution', Dr Patdiwala urged to the audience. He concluded with green building concept utilizing natural lights & natural resources during construction and operation which ultimately save energy. Mr Shyam Varghese, Honorary Secretary, Gujarat State Centre proposed the vote of thanks.

Jharkhand

The Chief Guest of the function, Mr V K Singh, General Manager (Electrical & Mechanical), Central Coalfields Limited, Ranchi highlighted the details of energy consumption in coal mines and further briefed on the idea of conserving huge amount of energy by adopting proper methods and the use of new technology. He explained the rules, regulations, and policies implemented by the Government of India in order to support energy efficiency and stressed on the usage of non-conventional sources of energy including solar, tidal, geothermal etc. 'Coal mines are also using a large amount of solar power in different establishments like corporate and area offices, pit offices of mines, etc', Mr Singh added. The Keynote Speaker, Mr Ashish Agrawal, Central Mine Planning and Design Institute Limited (CMPDIL), Ranchi described in details about the actual meaning of energy conservation and its need. He also deliberated on consumption of electrical energy in mines and how to reduce the cost & increase efficiency through energy conservation. Mr Niket Mehta, CMPDIL, Ranchi, the second keynote speaker talked about fuel consumption in Heavy Earth Moving Machinery (HEMM), deployed in Coal India Limited. Earlier, Mr Siyaranjan Kumar Singh, Chairman, Jharkhand State Centre and Council Member, IEI welcomed the gathering. Mr Jitendra Kumar, Honorary Secretary, Jharkhand State Centre proposed the vote of thanks.

Manipur

The Theme Speaker of the day, Mr W Homendro Singh, in his address emphasized upon the need to conserve energy for combating the ever



increasing power consumption in the world. Being a land-locked state more focus on renewable sector is the need of the hour, Mr Singh mentioned. Earlier, Dr N Monika Chanu welcomed the august gathering and the members on the dais. Mr N Shyamsundar Singh, Chairman of the Centre, in his Address spoke at a length covering different aspects of energy and its importance, issues facing the generation of energy, fast depletion of finite reserve of fossil fuels & natural gas and other impacts on the environment that cause climate change etc. Dr N Monika Chanu proposed the vote of thanks.



Uttar Pradesh

The Chief Guest and Speaker on the occasion, Dr Bharti Dwivedi, Professor, Electrical Engineering Department, Institute of Technology, Abdul Kalam Technical University, Lucknow narrated three key factors for energy conservation namely, reducing energy consumption/wastage; increasing energy efficiency; and including fuel diversification. She further mentioned that in 1978, Government of India constituted Petroleum Conservation Research Association (PCRA) to advise the government regarding formulation of Energy Conservation policies and create awareness among people about the importance of conservation of energy. Dr Dwivedi highlighted functional domain of Bureau of Energy Efficiency (BEE) in the field of energy conservation which include; implementation of Energy Conservation Building Codes; spreading awareness about energy conservation to users; promoting co-generation of electricity; Promoting R&D in the area of Energy Conservation etc. Earlier, Mr Rajesh Kumar Trivedi, Chairman, UP State Centre and Council Member, IEI welcomed the guests and dignitaries. Mr V B Singh, Council Member, IEI also spoke on the occasion. Mr J S Misra, Past Honorary Secretary, UP State Centre proposed the vote of thanks.



LOCAL CENTRES

Agra



Ms Saumya Agrawal, IAS, Managing Director, Dakshinanchal Vidyut Vitran Nigam Limited, Agra graced the occasion as Chief Guest. The Keynote Speaker of the function, Mr Gaurav Pratap Rana, Dayalbagh Educational

Institute, in his address highlighted on conservation of human energy, heat energy and solar energy. Earlier, Dr Ashok Yadav, Chairman of the Centre delivered the welcome address. Mr Rajnish Kumar Yadav, Joint Secretary of the Centre proposed the vote of thanks.

Ahmednagar

Dr (Ms) M S Patwardhan, Assistant Professor, Electrical Engineering, Dr Annasaheb Shinde College of Agricultural Engineering & Technology, Mahatma Phule Krishi Vidyapeeth, Rahuri, during her address on 'Energy Conservation Techniques' stated that the energy usage has direct impacts on fossil fuels reserve, pollution,



greenhouse gas emissions and oil spills. She further enumerated that two major objectives for conserving energy are to save on utility bills and protecting the environment. She emphasized on energy audit, saving energy in agricultural sector and identification of other sectors, where energy savings can be achieved. Dr Patwardhan opined that farmers should be encouraged to use standard fuel efficient pump sets, installing proper pump system and strictly following norms and standards of each equipment. Earlier, Mr Sangam Sinha, Chairman, Ahmednagar Local Centre welcomed the audience.

Asansol

Mr Ramesh Prasad, Former General Manager, Eastern Coalfields Limited graced the occasion as the Guest-of-Honour. In his speech, Mr Prasad



stressed on reduction of power consumption through reduction of waste and increasing awareness among the people regarding the use of low powered devices. Mr Paritosh Chattaraj, Assistant General Manager, Electrical Projects, Maithan

Alloys Limited explained about the industrial aspects of power utilization and it's control by proper use of improved machines and their harmonics. Mr Saradindu Dutta, Assistant General Manager, Durgapur Thermal Power Station, Damodar Valley Corporation mentioned the role of Government and individual to control conservation of power as per BEE standards. Dr Debashis Sarkar, Honorary Secretary, Asansol Local Centre proposed the vote of thanks.

Bareilly

Mr S K Suri, Chairman, Institute of EHS Studies, Bareilly, in his speech explained that feasibility of energy conservation is based on people's mindset for saving the natural energy reserve. 'It is possible to save much of the Natural Energy by many of the possible and simple ways like turning off the fans, A.C., Electronic items, Laptops, etc', he opined. Mr Saheb Singh, Honorary Secretary, Bareilly Local Centre proposed the vote of thanks.



Bokaro Steel City



The Chief Guest on the occasion, Mr S K Sahoo, Chief General Manager (Energy Management Department), SAIL, Bokaro Steel Plant in his address, mentioned about the role of common people towards

conservation of energy specifically citing example of wastage of food and urged engineers to reduce wastages & losses, and to adopt improved operation and maintenance practices. Mr N P Srivastava, General Manager, Head of Environment Division, Bokaro Steel Plant, in his keynote address, spoke about the impacts of non-renewable energy resources and its fast depletion on the environmental protection, climate change & health of human being and emphasized upon more application of renewable energy resources. Earlier, Mr Yogendra Nath Singh, Chairman, Bokaro Steel City Local Centre, in his welcome address enumerated how to conserve energy by resorting to reduction of water consumption, maximum use of sunlight and adoption of 3r's basic concepts. Mr Deo Prasad Jha, Honorary Secretary, Bokaro Steel City Local Centre proposed the vote of thanks.

Durgapur

The Chief Guest of the function, Mr Sanjoy Kumar Ghosh, Deputy Chief Engineer, Damodar Valley Corporation, Durgapur Steel Thermal Power Station, Andal, in his address noted that National Energy Conservation Day is observed all over India to make people aware of global warming and climate change and promote a conscious effort towards saving the energy resources. He highlighted on using energy sources efficiently to save it for future usage and explained the functional domain of the Bureau of Energy Efficiency (BEE), engaged in execution of the Energy Conservation Act in India and is a constitutional body that helps in the development of policies and strategies in order to reduce the energy usage.

The Guest-of-Honour, Prof Tamal Mandal, Chemical Engineering Department, NIT Durgapur, in his speech deliberated on 'Industrial Waste Management and Valorization'. Dr Chittatosh Bhattacharya, Deputy Director, National Power Training Institute (Eastern Region), Durgapur was present and addressed the gathering. Earlier, Prof K C Ghanta, Chairman, Durgapur Local Centre and Council Member, IEI welcomed the audience. Mr S Islam, Past Honorary Secretary of the Centre proposed the vote of thanks.

Faridabad

The Chief Guest of the function, Mr Surinder Singla, Managing Director, Five – M Energy Pvt Ltd shared his expertise on energy conservation. He further highlighted on energy conservation, natural resources depletion due to increase in population, practical methods of energy conservation, zero energy balance techniques for energy conservation in green construction. Other dignitaries present on the occasion included Dr SVAV Prasad, Dean, Lingaya's University and Mr Dinesh Kumar, Vice Chancellor, J C Bose University of Science and Technology, YMCA, Faridabad and addressed the gathering. Earlier, Mr Sandeep Handa, Chairman, Faridabad Local Centre, in his welcome address gave a brief statistics about Energy conservation. Mr Kuldip Raj Gupta, Honorary Secretary of the Centre proposed the vote of thanks.



Ghaziabad

Mr Dinesh Kumar Agarwal, Executive Director (Retd), National Thermal Power Corporation (NTPC) graced the occasion as Chief Guest and described various steps and strategies adopted by NTPC on its different projects for the conservation of energy. The Guest-of-Honour of the function, Mr Syed Javed Mohsin, Managing Director, Patikari Power Private Limited, Gurgaon, in his address spoke about the functions of Bureau of Energy Efficiency (BEE) and cited practical examples and steps to be taken for saving and conservation of energy. Earlier, Mr Jai Pal Singh, Chairman, Ghaziabad Local Centre and Council Member, IEI welcomed the august gathering. Mr R P Sharma, Convener of the event briefed about the history and importance of the Day. Ms Chitra Kumar Tyagi, Honorary Secretary, Ghaziabad Local Centre proposed the vote of thanks.



Gwalior



Mr Prabhat Bhargawa, Chairman, Gwalior Local Centre, in his opening remarks highlighted that 'Energy Saved is Equal to Energy Generated.' Mr P Y Khanvilkar, Honorary Secretary, Gwalior Local Centre proposed the vote of thanks.

Indore

Mr Jitu Patwari, Honorable Minister of Higher Education, Sports and Youth Affairs, Government of MP graced the occasion as Chief Guest. Mr Patwari, during his address mentioned that energy is prime requirement

of country and energy conservation should be publicized through masses in a simple manner so that they can easily be adopted. Dr Sunil K Somani, Vice Chancellor, Medi-caps University, Indore graced the function as the Guest-of-Honour. Dr Somani, in his speech stressed on design of residential buildings, offices and industries in an energy efficient manner. Dr Rakesh Saxena, Director, SGSITS, Indore was present in the occasion. Earlier, Prof (Dr) Ms Shilpa Tripathi, Chairman, Indore Local Centre delivered the welcome address. Mr Deepak S Shah, Honorary Secretary, Indore Local Centre proposed the vote of thanks.



Jodhpur

Dr K K Paliwal, Director, JIET Group of Institutions, Jodhpur, graced the function as the Chief Guest. In his speech, Dr Paliwal emphasized upon the need of effective utilization of energy and importance of energy audit



for different commercial and residential sectors. The Guest-of-Honour on the occasion, Dr P C Pande, Former Principal Scientist, ICAR-Central Arid Zone Research Institute, Jodhpur, touched upon aspects of

energy conservation through solar energy, highlighted the current status of energy production and consumption in India and further discussed about utilization of photovoltaic cells in various devices and its applications in rural and agriculture sector. Earlier, Prof Akhil Ranjan Garg, Chairman, Jodhpur Local Centre welcomed the august gathering. Mr Ghanshyam Prasad Vaishnav, Honorary Secretary, Jodhpur Local Centre proposed the vote of thanks.

Kanyakumari

Dr M Marsaline Beno, Vice Principal, St Xavier's Catholic College of Engineering, Nagercoil, in his keynote address explained different type of energy and its importance and energy conservation in different fields. Earlier, Mr V Sivathanu Pillai, Chairman, Kanyakumari Local Centre delivered the welcome address. Mr V Muthum Perumal, Honorary Secretary, Kanyakumari Local Centre proposed the vote of thanks.

Kolhapur

The Speaker on the occasion, Mr Sultan Shelke, Branch Engineer, Maharashtra State Electricity Distribution Company Limited, Kolhapur, highlighted applications of conventional energy sources i.e. coal, oil, gas and



atomic energy which will be exhausted in near future and stressed on applications of non conventional energy sources namely solar energy, wind power etc. He recommended more utilization of LED equipments and Energy Audit at home, offices and factories to conserve electricity. Mr Pradip Vinayak Kulkarni, Honorary Secretary, Kolhapur Local Centre proposed the vote of thanks.

Kota

Prof R A Gupta, Vice Chancellor, Rajasthan Technical University (RTU), Kota, graced the occasion as Chief Guest. Mr R K Gupta, Former CMD, Rajasthan Rajya Vidyut Utpadan Nigam Ltd, Jaipur graced the function as the Guest-of-Honour. Mr L K Jain, General Manager (Retd), NTPC & Vice President, SEW Thermal Power Corporation presented a key note address during the occasion. Earlier, Mr Anand Bardava, Chairman, Kota Local Centre welcomed the august gathering. Mr Sunil Bohra, Honorary Secretary, Kota Local Centre of the Centre proposed the vote of thanks.



Madurai

The Chief Guest, Dr V Saravanan, Department of Electrical & Electronics Engineering, Thiagarajar College of Engineering, Madurai stated about the conventional power generation through fossil fuels, coal, gas, diesel and naphtha, highlighted high rate of CO₂ emissions from thermal power houses



leads to global warming. He explained the significance of energy audit and clarified that in industry, there are three principle operating expenses namely, material cost, energy cost, and labour cost. Dr

Saravanan emphasized that energy would invariably emerge as a second top expenditure, thus energy management function constitutes a strategic area for cost reduction. 'Energy Audit focuses to concentrate on avoidable losses, quantify and identify ways & means for reduction, implementation, and increasing production', he opined. Mr P Rajamani, Council Member, IEI also graced the occasion and addressed the gathering. Earlier, Mr S Rajagopal, Chairman, Madurai Local Centre and Council Member, IEI delivered the welcome address. Mr R Narayanasamy, Honorary Secretary, Madurai Local Centre proposed the vote of thanks.

Meerut

Mr C P Gupta, Past Chairman of the Centre explained various techniques in energy saving and advised all to inculcate the habit of energy saving in their daily life. Mr Rajneesh Kumar and Mr Mohan Lal Jain, Chairman and Honorary Secretary, Meerut Local Centre respectively were also present in the function and addressed the gathering.



North Bengal

The Speaker on the occasion, Mr Madhab Chandra Mondal, Department of Mechanical Engineering, Jalpaiguri Govt. Engineering College, Jalpaiguri, while speaking on the theme 'Future Scope of Renewable Energy in India' described about various types of energy sources in India. He also briefly narrated about the conventional and renewable energy sources and presented



an idea about the energy production from different sources and the electricity and fossil fuel consumption in India. Mr Mondal threw lights on the present scenario of renewable energy sources and also the future potential of renewable energy in India. Dr Santanu Das, Honorary Secretary, North Bengal Local Centre proposed the vote of thanks.

Palghat

The Guest speaker during the occasion, Mr Dileep Cherian, Steam Engineering Group, Forbes Marshall Pvt. Ltd Kochi while addressing the audience on the subject 'Energy Conservation



in Thermal System', pointed out the possibilities of energy conservation in thermal industries, especially where steam is used as a primary utility. Mr Cherian covered his speech in line with steam generation, utilization, distribution, flash steam and condensate recovery. Earlier, Mr K Unnikrishnan, Chairman, Palghat Local Centre delivered the welcome address. Mr A Ramesh, Honorary Secretary proposed the vote of thanks.

Ranipet

The speaker of the Day, Mr P Mohanavel, EEE Department, C Abdul Hakeem College of Engineering & Technology (CAHCET), Vellore, Tamilnadu delivered lecture on the theme 'Energy Conservation Measures'. Mr P Mohanavel, in his address covered various



issues including depletion of fossil fuels, application of renewable energy sources like Solar, Wind, Hydro and Geo thermal energy etc; use of non-conventional energy sources increased resulting in reduced use of fossil fuels; importance of 3Rs – Reduce, Re-use, Recycle in energy conservation; energy savings - measures to be adopted in home, office & industries; turn-off lights & appliances when not in use; Reducing the usage of energy-intensive appliances by performing household tasks manually; using air conditioner less in the summer; usage of LED bulbs in place of incandescent & CFL bulbs; upgrading the HVAC system etc. Mr M Salai Manalan, Honorary Secretary, Ranipet Local Centre proposed the vote of thanks.

Saurashtra

The Theme Speaker on the occasion, Prof Kamleshkumar Sangani, Vice Principal, Head & Associate Professor, Mechanical Engineering Department, Sanjaybhai Rajyaguru



College of Engineering, Rajkot, in his address focused on important sources of energy viz. Sour Urja; Coal, Natural Gas and Crude; Plants and Animals; Nuclear Power for Electricity Production; Hydro Electric Plant; Wind Power; Solar Power etc. He further suggested to follow some measures which will help reduce use of energy namely Use of LED and electronic regulator in fan; switch off of DTH & TV not in use; avoid plastic use; use of solar energy. Prof R D Raghani, Principal, A V Parekh Technical Institute, Rajkot presided over the function. Earlier, Mr Navin Kalaria, Past Honorary Secretary of the Centre delivered the welcome address. Mr Deepak V Suchde, Chairman, Activity Sub-Committee of the Centre briefed about the activities of IEI and extended the vote of thanks at the end of the programme.

Sustainable Agrifood Systems

Hosur Local Centre of the Institution organized All India Seminar on the topic 'Sustainable Agrifood Systems' under the aegis of Agricultural Engineering Division Board of IEI during August 29-30, 2019 at Hosur. The Chief Guest of the function, Mr Gomathi Nayagam P, Honorary Secretary, Tamilnadu State Centre, IEI, in his speech stated that the access to climate data and forecasts, information about soils, humidity is enabling a revolution with the advancement of sustainable food systems and opening the door to the development and application of novel optimization and simulation models in Agriculture and the Agrifood industries. He further explained on enhancing the income through selling of Agroproducts with the support of Government of India schemes. He further clarified that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. 'Agricultural Food security is often explained in terms of food availability, food access and food utilization', he added. Mr Nayagam continued that global agriculture currently produces sample calories and nutrients to provide the entire world's people healthy and productive lives. However, food is not distributed equally to regions, countries, households and individuals. Improved access to food-through increased agricultural productivity and income is essential to meet the nutrition requirement of the world's growing population. 'Successful food security and poverty-oriented programs not only assist poor rural populations to produce more and diversified products but to produce a surplus that can be marketed and thereby generate income for the purposes of improving quality of life through improved diet and nutrition, investment in productive activity, and as collateral for credit to purchase inputs and/or other supplies to enhance agricultural or non-agricultural enterprise', Mr Nayagam opined. Earlier, Dr



J Arivudainambi, Chairman of the Centre delivered the welcome address. Finally, Prof (Dr) V Mani Vasagan, Honorary Secretary, Hosur Local Centre proposed the vote of thanks. A large number of papers were presented and discussed during the technical sessions of the Seminar.

The recommendations of the Seminar as emerged are given hereunder:

Sustainability concepts, approaches and tools should be developed, that offers a common vision of the agriculture sector; Transition to sustainable food and agriculture should be expanded and accelerated which ensures world food security, provides economic and social opportunities, and protects the ecosystem services on which agriculture depends; There should be focus on making this sector sustainable, which can bring farmers in touch with relevant investors.

Kerala's Water Woes - Challenges and Mitigation

Kerala State Centre of the Institution organized All India Seminar on the topic 'Kerala's Water Woes - Challenges and Mitigation' under the aegis of Environmental Engineering Division Board of IEI during September 19-20, 2019 at Thiruvananthapuram. Mr K Krishnankutty, Hon'ble Minister for Water Resources, Government of Kerala, graced the occasion as Chief Guest. In his address, Hon'ble Minister expressed that agriculture is being done in

25 Lakh ha of land in Kerala, out of which irrigation facility is available only for 4 lakh ha. 'Similarly, piped water connection is available only for one fourth of the population and these situations have to change for which new ideas are to be brought forward by the engineers', Hon'ble Minister added. Dignitaries present during the occasion include Prof (Dr) K P Sudheer, Executive Vice President, Kerala State Council for Science, Technology and Environment, Thiruvananthapuram, Mr R Srinivasan, Chief General Manager – NABARD Kerala Region, Dr D Padmalal, Group Head, National Centre for Earth Science Studies (NCESS), Dr K R Sooryanarayana, Regional Director – Central Ground Water Board- Kerala & Lakshadweep Region and Mr P K Baburajan, Chief Environmental Engineer – Kerala State Pollution Control Board. Earlier, Mr K K Gopalakrishnan Nair, Chairman, Kerala State Centre and Council Member, IEI welcomed the guests and dignitaries. Mr Ashok Kumar K, Honorary Secretary, Kerala State Centre proposed the vote of thanks. A large number of papers embracing the theme were presented and discussed during the technical sessions of the two-day Seminar. A Souvenir containing all the technical papers presented in the Seminar was released during the Seminar by the Chief Guest and other dignitaries present on the dais. During the technical sessions, different aspects of water sustainability, water conservation, water quality and different awareness measures for ground water reservations were discussed at a length.



Recent Developments in Technological Options for Resource Recovery in Chemical Process Industry

Telangana State Centre of the Institution organized All India Seminar on the topic 'Recent Developments in Technological Options for Resource Recovery in Chemical Process Industry' under the aegis of Chemical Engineering Division Board of IEI during October 3-4, 2019 at Hyderabad. The Chief Guest during the occasion, Mr M Dana Kishore, IAS, Managing Director, Hyderabad Metropolitan Water Supply & Sewerage Board, Hyderabad emphasized that the natural ecosystems inherently obtain circular economy

He concluded that there is a need for innovation in technologies in a cost-effective manner along with resource recovery. Dr N V Satyanarayana, Chief Scientist & Head, Energy and Environmental Engineering, CSIR-Indian Institute of Chemical Technology graced the occasion as Guest of Honour. During his address, Dr Satyanarayana, highlighted the need to develop remunerative technologies and emphasized upon the need of natural resource recovery in a cost effective approach. 'Water should be

perceived as an abundantly available raw material for resource recovery', he opined. Dr Satyanarayana further deliberated on developments of natural practices by human in waste management. Mr B Kalyan Chakravarthy, IAS, Director General, Environment Protection Training & Research Institute (EPTRI), Hyderabad emphasized on incentivizing the technologies for developing a circular economy. 'Policies need to be developed for chemical industries and the developed technologies must have sustainability', he added. Dr A Gangagni Rao, Chief Scientist, Department of Energy and Environmental Engineering, CSIR-Indian Institute of Chemical Technology (IICT), Hyderabad and Convener of the event explained the scope and need of the Seminar. Earlier, Dr G Rameshwar Rao, Chairman, Telangana State Centre and Council Member, IEI welcomed the august gathering. Mr T Anjaiah, Honorary Secretary, Telangana State Centre proposed the vote of thanks.

Through an expert Panel Discussion, the following recommendations have been emerged from the Seminar:

Resource recovery should be considered as a thrust area for special funding; Joint Forum with Research and Development Institutes and Pollution Control Boards should be formed; Water audit should be conducted on regular basis; Modular systems for wastewater treatment should be developed; Effective treatment solutions should be developed for recovery of bio-energy; Effective interactions with industries should be established.



practices and the existing technologies need to provide meaningful directions from these natural principles. He further urged to promote significant advances in developing technologies in India. 'Recovery of resources and by products formed during a process should be used in other technologies', he added. He highlighted that the existing technologies have limitations and they can be overcome by developing innovative technologies. He urged that at personal level also, people should follow resource recovery practices at home so that the waste coming out requires minimum input for treatment.

Advanced Welding Techniques

South Gujarat Local Centre of the Institution in association with Automobile & Mechanical Engineering Department at Chhotubhai Gopalbhai Patel Institute of Technology (CGPIT), Bardoli, Surat organized National Workshop on the topic 'Advanced Welding Techniques' under the aegis of Production Engineering Division Board of IEI during October 3-4, 2019 at Surat. Dr N C Shah, Advisor, Uka Tarsadia University & Past Chairman of the Centre graced the occasion as the Guest-of-Honour and addressed the gathering. Other eminent dignitaries spoke on the occasion included Dr Rajkumar Patil, Dean and Director, CGPIT and Dr C K Desai, Vice Principal, CGPIT. Lectures were delivered by eminent resource persons on various sub-themes during technical sessions ie. Mr Ravi Jani, Manager, L&T, Hazira on 'Conventional GTAW Welding Process' and on 'Conventional NDT Methods'; Mr Devendra Patel, Proprietor of Slock NDT & Inspection Services, Surat, on 'Conventional and Advanced NDT Methods', 'Hands on Session on Ultrasonic Test' and Magnetic Particle Test'; Dr Jay Vora, Assistant Professor, Pandit Deendayal Petroleum University, Gandhinagar on 'Flux Assisted Welding Processes for Sustainable



Development' and on 'Activated TIG Welding Process'; Mr Subhash Das, Senior Engineer, ITW India Ltd, Vadodara on 'Regulated Metal Deposition Welding Technology – An Innovative Short Circuit Process'. Earlier, Mr Kirti Hiralal Shethna, Chairman, South Gujarat Local Centre and Council Member, IEI welcomed the audience. Mr Dipak Gomanbhai Patel, Honorary Secretary, South Gujarat Local Centre proposed the vote of thanks.

Theory and Practice of Sustainable Manufacturing

Tiruchirappalli Local Centre of the Institution in association with the Department of Production Engineering, National Institute of Technology, Tiruchirappalli (NITT) organized All India Workshop on the topic 'Theory and Practice of Sustainable Manufacturing' under the aegis of Production Engineering Division Board of IEI during September 20-21, 2019 at Tiruchirappalli. Dr P Sathiya, Professor, Department of Production Engineering, NITT, in his address stated about various state-of-art technologies of production engineering. Dr S Kumanan, Professor (HAG), Department of Production Engineering, NITT explained on design and development of sustainable industrial systems and highlighted on sustainable design need in industrial as well as social point of view. Dr S Vinodh, Associate Professor, Department of Production Engineering, NITT delivered his lecture on the theme 'Sustainable Manufacturing Overview', and highlighted on fundamentals of Sustainable Manufacturing, Triple Bottom Line approach, transition of manufacturing systems, sustainable manufacturing tools, Environmentally Conscious Quality Function Deployment (ECQFD) and Life Cycle Costing. Dr Vinod, in another technical session, briefed the participants and delegates about sustainability indicators in manufacturing and end of life management approach. Dr A Raja, Additional General Manager (WRI) BHEL (Retd) explained about sustainable manufacturing in welding process. He highlighted the importance of sustainability concepts in SAW process. Dr Senthilkumaran,



Assistant Professor, Mechanical Engineering Department, Indian Institute of Information Technology, Design & Manufacturing, Kanchepuram delivered lecture on sustainable product design practices for inclusive manufacturing. Dr Senthilkumaran further discussed energy and material characterization for different joining processes. Dr R M Thirupathi, Vice President, Product Engineering, Rane TRW Steering Systems Private Limited, Tiruchirappalli delivered his lecture on modeling for sustainable manufacturing. A Laboratory Session was also organized on Additive manufacturing and Life Cycle Assessment. Earlier, Dr N Kumaresan, Chairman, Tiruchirappalli Local Centre, welcomed the audience.

Solid Waste Management- An Industrial Perspective

Bokaro Steel City Local Centre of the Institution in association with SAIL, Bokaro Steel Plant organized All India Seminar on the topic 'Solid Waste Management- An Industrial Perspective' under the aegis of Environmental Engineering Division Board of IEI during September 21-22, 2019 at Bokaro Steel City. Mr P K Singh, CEO, SAIL, Bokaro Steel Plant graced the occasion as the Chief Guest and inaugurated the Seminar. In his address, Mr Singh stated that National Steel Policy – 2017 envisages steel production to the tune of 300 MT by 2030 and alerted steel makers to accept challenges of huge generation of solid wastes. Further, he appealed engineers, technocrats and experts to evolve practical and economical innovative practices for better ways for solid waste management in the industries by organizing Seminars and Conventions. The Guest-of-Honour on the occasion, Mr R P Pandey, Asset Manager, ONGC, Bokaro mentioned that solid wastes has great potential to pollute soil, air and ground water as such industries must spread awareness among its employees to abide by standards laid down in Solid Waste Management Rules - 2016. Special Guest of the function, Mr C D Goswami, Executive Director (Technical Services), MECON Limited, Ranchi, in his Keynote Address stated about 'Waste Hierarchy' for an effective approach to identify most suitable waste management. He emphasized to change the mindset for defining waste to accelerate industrial

growth to promote the concept of circular economy. Special Guest during the occasion, Mr Sanjay Sen, General Manager, MECON Limited, Bokaro & Member, ENDB, IEI mentioned about different eco-friendly technologies to be adopted by the industries for better utilization of solid waste. Earlier, Mr Yogendra Nath Singh, Chairman, Bokaro Steel City Local Centre, in his welcome address stated that it is the need of the hour to address menace by adopting 4R's Practices, Industrial Symbiosis, Waste to energy and innovative practices. Mr N P Srivastava, Head of Environment, Bokaro Steel Plant & Convener of the event elaborated various aspects of solid waste management. Mr Deo Prasad Jha, Honorary Secretary, Bokaro Steel City Local Centre proposed the vote of thanks. A large number of papers embracing the theme & sub-themes were presented and discussed during the technical sessions of the two-day Seminar.

The recommendations as emerged from the Seminar are given hereunder:

Use of eco-friendly Jute Geotextiles in coordination with National Jute Board, Ministry of Textiles, Govt. of India to be explored for stabilization of Fly-Ash dump at Bokaro; Use of Blast Furnace sludge and dust as briquettes may be explored as an environment friendly way of BF sludge/dust recycling and to reduce input cost of Steel Plants; Steel industries may collaborate together to come up with a commercially viable solution to enhance utilization of LD slag; Proper disposal of fly-ash produced by power plants in collaboration with Coal Mining companies would be an important area to concentrate; Proper utilization of fly-ash to be explored as input for various manufacturing industries; Low iron dust/sludge like sinter fines, sludge compartment mound may be utilised as resource for sintering or in Blast Furnace; Utilization of High Iron dust/sludge like GCP Sludge, Flue Dust, Mill Scale, Caster scale etc. as coolant in convertors be envisaged further.



Artificial Intelligence: An Application Perspective

Coimbatore Local Centre of the Institution organized All India Seminar on the topic 'Artificial Intelligence: An Application Perspective' under the aegis of Electronics & Telecommunication Engineering Division Board of IEI during September 5-6, 2019 at Coimbatore. Prof Vijay Krishna Menon, Computational Engineering and Networking, Amrita Vishwa Vidyapeetham University, Coimbatore graced the occasion as the Chief Guest and addressed the august gathering. Dr S A Pasupathy, HoD, Department of Electronics and Communication Engineering (ECE), Kumaraguru College of Technology (KCT), Coimbatore was also present during the occasion and addressed the audience. Prof Vijay Krishna Menon spoke on the topic 'AI and Machine Learning Demystified' and considered as a methodical way to monitor the healthcare systems. He started his presentation by introducing the need for Artificial Intelligence (AI). He lucidly explained the types of Artificial Intelligence and its purposes at different applications. He further explained the strategies for performing Artificial Intelligence techniques on different types of real time problems. A number of Invited Lectures delivered by eminent personalities included Mr Vishwanathan, Assistant Professor, Department of Electrical & Electronics, KCT, Coimbatore on 'Deep Learning for Computer Vision using Python'; Dr S N Shivappriya, ECE Department, KCT on 'Significance of Artificial Intelligence' and Mr Ruthrakumar, Application Engineer, Axis Global Automation Group of Companies, Coimbatore on 'AI Robots'. Earlier, Mr P



R Natarajan, Chairman, Coimbatore Local Centre delivered the welcome address.

Following recommendations may be taken into account.

Interdisciplinary interaction may lead to new product development in the Artificial Intelligence field; Continuous improvement of the facilities to be undertaken to compete with the latest technological advancements in Artificial Intelligence.

Structural Design with Special Reference to Seismic Effect on High Rise Building

Gorakhpur Local Centre of the Institution organized All India Seminar on the topic 'Structural Design with Special Reference to Seismic Effect on High Rise Building' under the aegis of Civil Engineering Division Board of IEI during October 12-13, 2019 at Gorakhpur. The Guest of Honour during the occasion, Mr Sanjeev Ranjan, IAS, CEO, Gorakhpur Industrial Development Authority (GIDA) in his address emphasized on construction of earthquake resistant buildings. The Key Note speaker, Dr Achal Kumar Mittal, Senior Principal Scientist, Structural Engineering, CSIR-Central Building Research Institute (CBIR), Roorkee spoke on the topic 'Tall Buildings and Earthquake Resistance'. During his address, Dr Mittal explained with a comparative study that earlier structural members were designed to carry, primarily, the gravity loads. However, due to recent advances, building weight is reduced and slenderness is increased which means the lateral loads, that include the loads due to wind and earthquakes, are increased. 'Especially in the tall buildings, slenderness increases and hence the flexibility, so the tall buildings suffer from the lateral loads resulting from wind and earthquakes', he added. He further explained that as a general rule, therefore, the taller the building the more necessary is to identify the proper structural and foundation systems for resisting the lateral loads and it is equally important to apply suitable technology to provide supplementary damping to such high rise structures for better resistance to lateral loads. He also talked about the various structural systems to counteract the lateral forces, e.g. MRF (Moment Resistant Frames), Shear Wall Structures (SWF), Braced Frame System (BFS), Core and Outrigger System and Tubular system. He

further explained about the foundation for high rise buildings especially in earthquake prone areas. In conclusion, Dr Mittal insisted that health check-up of old buildings must be carried out on regular basis and possible arrangements/modifications should be made to avoid damages during earthquakes. Another Expert Speaker on the occasion, Dr R K Srivastava, Retd. Engineer-in-Chief, UP Public Works Department, Ex Managing Director, UP State Bridge Corporation Limited and Ex Director- Dr M C Saxena College of Engineering and Technology, Lucknow, in his speech, spoke on 'Raft Foundations-a Sustainable Option for High Rise Buildings in Alluvial Region'. He discussed about the Shallow Foundations, Combined footings, Strap or Cantilever Footings, Mat Foundations also. Dr Srivastava further discussed about Elevated Road Construction, Box Type Bridges etc. Earlier, Mr Mirza Waseem Beg, Chairman, Gorakhpur Local Centre welcomed the august gathering. Mr V K Srivastava, Honorary Secretary, Gorakhpur Local Centre proposed the vote of thanks.



Tribology as Energy Saver for Mining, Steel & Other Heavy Industries

Jharkhand State Centre of the Institution in association with Tribology Society of India, Ranchi Chapter organized All India Seminar on the topic 'Tribology as Energy Saver for Mining, Steel & Other Heavy Industries' under the aegis of Mechanical Engineering Division Board of IEI during September 28-29, 2019 at Ranchi. Dr S S V Ramakumar, Director (R&D), Indian Oil Corporation Limited, Faridabad and President, Tribology Society of India graced the occasion as the Chief Guest and addressed the august gathering. Dr Remakumar, in his address emphasized upon the importance and application of tribology in industries basically for energy conservation. Mr R N Jha, Director (Technical/CRD), Central Mine Planning & Design Institute Limited, Ranchi; Mr Ajay Arora, Executive Director, (R&D), Research



& Development Centre for Iron and Steel - SAIL, Ranchi and Dr Rana S Chakravarty, Director, (Marketing) & Director (Production) (Addl Charge), Heavy Engineering Corporation Limited, Ranchi graced the function as the Guests-of-Honour and deliberated on the applications of tribology in energy conservation in steel, mining and heavy industries. Mr S C Vishvakarma, Dean of Academic Affairs, RTC Institute of Technology, Ranchi delivered Keynote Address. Earlier, Mr Siyaranjan Kumar Singh, Chairman, Jharkhand State Centre and Council Member, IEI delivered the welcome address. Mr M I Alam, Co-Chairman, Organising Committee deliberated on the theme of this Seminar. Mr Jitendra Kumar, Honorary Secretary, Jharkhand State Centre proposed the vote of thanks. A large number of resource papers were presented and discussed by the eminent personalities during the

technical sessions of the two-day Seminar. A Souvenir was released in this occasion by the Chief Guest, Guest of Honours and other dignitaries present on the dais during the inaugural session. Large number of papers were presented mainly from the industries on different topics embracing tribology and condition monitoring, that include; Energy saving in mining industries through tribological applications, laboratory evaluation of energy efficiency characteristics of hydraulic equipment and its Field validation, tribology of high torque low speed system, maintenance as energy saver, waste reducer and economical for HEMM in mining applications, evaluation of thermal and tribological performance in single cylinder four stroke diesel engine using nano-lubricants, enhancement of transmission performance and durability through lubricant properties, condition monitoring through Scheduled Oil Sampling services of heavy earthmoving machines and related equipment, total lubrication management in mining, steel and heavy and related industries, etc.

The broad recommendations of the seminar are as follows.

Increased application of energy efficient hydraulic oil be promoted in excavators used in mining industry for its better efficiency, performance & energy conservation; Better tribological approach be adopted including surface treatment, thermal coating, wear plates/bars etc leads to energy saving, primarily through frictional losses, secondary due to reduction in wear and tertiary through reduction of energy required to manufacture those spares. On the other hand it also reduces the CO₂ emission; By modifying the design of lubrication system & additional cooling, the wear of rollers for steel plants could be reduced; Replacing the present lubricants with nano-lubricants, the engine efficiency could be increased and thus fuel can be conserved; Removal of contaminants in fuel and regular condition monitoring of different type of lubricants used in mining, steel & heavy industries can foresee the impending failures. It will decide the remedial actions in time which could be cost effective and also avoid the cascading effects; The performance of gear pump can be improved by adopting metal polymers in various applications of steel, mining, cement, agriculture & other industries.

Recent Trends in Automation and Digital Manufacturing

Telangana State Centre of the Institution organized All India Seminar on the topic 'Recent Trends in Automation and Digital Manufacturing' under the aegis of Production Engineering Division Board of IEI during September 23-24, 2019 at Hyderabad. Mr V Srinivas Goud, Hon'ble Youth Service, Tourism & Culture and Archaeology Minister, Government of Telangana graced the function as Chief Guest. In his address, the Hon'ble Minister



stated that the Engineers have play a prominent role in nation building. The Guest-of-Honour on the occasion, Dr Y Sreenivas Rao, Programme AD, Research Centre Imarat, Defence Research & Development Organization, Govt. of India, Hyderabad emphasized upon the importance of industry 4.0 and digital manufacturing for Make in India initiatives, highlighted the need to produce critical components indigenously. A large number of papers embracing the theme were presented and discussed during the technical sessions of the two-day Seminar, that include; Additive Manufacturing, Rapid Prototyping, Artificial Intelligence, Industrial Automation, Machine Learning in manufacturing industry, Intelligent Manufacturing, Connected Factories, Micro Electro Mechanical Systems etc.

Recommendations emanated from the Seminar are as follows.

Manpower training be enhanced to suit the current technologies; There is a need to update curriculum / syllabus to suit current trends of manufacturing; Suitable Policy should be evolved for adaptation of industry 4.0 practices in every sector, particularly MSME.

News-in-Brief

The following is a brief account of Technical Activities organised by various Centres of the Institution

STATE CENTRES

Andhra Pradesh

Er Yarlagadda Sreeramulu Sixteenth Endowment Lecture on 'Opportunities in Space Program' delivered by Mr A Rajarajan, Director, Satish Dhawan Space Centre on December 20, 2019.

Delhi

Seminar on 'Satellite Remote Sensing for the Common Men' on November 30, 2019.

Gujarat

Organized 60th Annual Session of the Centre on December 1, 2019.

Karnataka

The Tenth Prof Satish Dhawan Commemoration Lecture delivered by Prof P Balam, Former Director, Indian Institute of Science, Bangaluru on December 2, 2019.

Kerala

Lecture on 'Spread Sheet Technique Revolutionise Design of Electrical Systems of High Rise Residential Building' delivered by Mr A G Hareendralal December 4, 2019.

A Technical Talk on Energy Conservation and Reusable Energy' on the occasion Energy Conservation Day 2019 delivered by Dr R Harikumar, Joint Director – Energy Management Centre (EMC), Kerala on December 18, 2019.

Tamilnadu

Lecture on 'D G Shipping Rules for Conducting Examination for Shipping Crew' delivered Mr S Kannan, Committee Member of the Centre on November 25, 2019.

Celebrated Energy Conservation Day 2019 on December 20, 2019.

Telangana

Er L Venkata Krishna Iyer, Er K V SrinivasaRao and Er M L Swamy 19th Endowment Lecture on the topic 'Professional Ethics in Civil Engineering' delivered by Mr P Surya Prakash, Managing Director, M/s Satyavani Projects and Consultants Pvt. Limited on November 19, 2019.

West Bengal

Celebrated World Habitat Day 2019 on November 19, 2019.

LOCAL CENTRES

Berhampur

Celebrated 24th Foundation Day on November 3, 2019.

Coimbatore

Lecture on 'Laser Metal Deposition' delivered by Dr Gopal Magadi, Principal Engineer, Cameron International Corporation, Houston, USA on December 19, 2019.

Lecture on 'Innovations in Nanotechnology: Breakthrough Technology and Emerging Markets' delivered by Dr Pradeep Halder, Principal and President at Halovation, Florida, USA on December 23, 2019.

Kalaburagi

Celebrated Energy Conservation Day 2019 on December 18, 2019.

Kota

Lecture on 'Construction in PQC & A Case Study on Bridge Concrete' delivered by Mr M K Jain, General Manager, Lea Associates South Asia Pvt Ltd, Jhalawar Project on December 28, 2019.

Meerut

Lecture on 'Sustainable Development Goals and their Achievement' delivered by Mr Atar Singh, Advisor & Ex- Director, NPTI, Ministry of Power, Govt. of India on December 15, 2019.

Nagpur

Er A B Kottewar Memorial Oration on the topic 'Fundamentals of Generator Design in Power Stations' delivered by Mr K K Bhatia, General Manager (Retd), Power Projects Division, BHEL on November 18, 2019.

Seminar on 'Energy Conservation Case Study Competition and Poster Competition' on December 20, 2019.

Tirunelveli

Lecture on the occasion of Energy Conservation Day 2019 delivered by Mr P Chandrasekaran, Executive Engineer / P & C -2, TNEB, Tirunelveli on December 27, 2019.

Tumakuru

Organized 'Knowledge Network Workshop (KNEW-2019)' during October 28-19, 2019.

Udaipur

Lecture on 'Investigative Engineering- Ensuring Durable and High Performing Concrete' delivered by Mr Rahul Mathur, Director, Guruvishwar Consultant Pvt. Ltd., Udaipur on December 6, 2019.

Upper Assam

Organized a programme on 'Awareness to Avoid Single Use of Plastic' on December 23, 2019.

Impact of Changing Energy Mix in the Power Sector

Contd. from page 16

renewable energy to reduce global warming, power system restoration and inter connected systems, Utilising hydro energy for supplying static and dynamic loads in remote areas, Different topologies of transformer less inverter for application of PV to grid tie system etc.

Recommendations of the International Conference include:

Power market Integration Initiatives, multipurpose use of water resources, Pump-storage projects, climate change mitigation by changing energy mix from fossil fuel to clean source of energy should be given priority; Sustainability of power producers due to reduction of emission intensity of GDP by 30-35% by 2030 and high economic growth with low per capita energy uses should be planned in advance; Advanced distribution management system (ADMS) and micro grid management should be introduced with due care; Causes of grid failures and black out should be investigated for maintaining reliability and security in smart power grid; Optimum Energy mix planning for power generation considering cost and environmental impact should be given priority.

National Building Code of India 2016

Palghat Local Centre of the Institution in association with Bureau of Indian Standards (BIS), New Delhi organized All India Workshop on 'National Building Code of India 2016' under the aegis of Civil Engineering Division Board of IEI during September 26-27, 2019 at Palghat. Mr Pratap Singh



Shami, Divisional Railway Manager, Southern Railway, Palakkad Division inaugurated the Workshop. In his address, Mr Shami mentioned that considering the national importance for housing and infrastructural development, large number of Indian Standards has been introduced in the important fields of planning, designing and construction of buildings, as also on the methodologies for enabling speedier construction and requirements for low income housing and for ensuring sound practices during construction, durability and safety of structures. 'The focus has been, of late, on the

earthquake resistant design and construction of buildings, for which series of Standards are available for design and construction engineers, including for strengthening and retrofitting of buildings', he added. Mr Shami enumerated that notwithstanding the above, the repeated onslaught of natural calamities such as earthquakes, cyclones, landslides, etc faced by the country, has brought home the ever increasing need for the common guiding document to enable monitoring and implementation of sound technical provisions and practices through techno-administrative mechanism and comprehensive built-in features. 'The NBC fulfills this need apart from collating comprehensive provisions relating to fire safety, selection of building materials, various building and plumbing services, management of assets and facilities, etc, all ensured following an approach to sustainability', opined Mr Shami. Ms Meenakshi Ganesan, Scientist F and Head, Bureau of Indian Standards, Coimbatore Branch, Mr S Arun Kumar, Scientist D, BIS New Delhi, Mr Sreejith NK, Mechanical Engineering Department, NSS College of Engineering, Palakkad, Mr Sreenidh, Manager Technical, The Ramco Cements Limited graced the occasion with their august presence. Earlier, Mr K Unni Krishnan, Chairman, Palghat Local Centre delivered the welcome address. Mr A Ramesh, Honorary Secretary, Palghat Local Centre proposed the vote of thanks. During two days, eminent resource persons presented lectures on diversified topics, that include; Overview of National Building Code of India, 2016, Structural Design: Prefabrication & Systems Buildings, Structural Design: Loads, Forces and Effects, Building Services - Electrical Installations etc.

Challenges and Research Opportunity for Electric Mobility Vehicles in India

Coimbatore Local Centre of the Institution in association with Centre for Automotive Research, Department of Mechanical Engineering at KPR Institute of Engineering and Technology (KPRIET) organized All India Seminar on the topic 'Challenges and Research Opportunities for Electric Mobility Vehicles in India' under the aegis of Mechanical Engineering Division Board of IEI during September 26-27, 2019 at Coimbatore. Mr Srinivasan Pannerselvam, Architect, Electric Vehicles, Robert Bosch Engineering and Business Solution Private Limited, Coimbatore inaugurated the Seminar and addressed the august gathering. Dr N Gunasekaran, HoD, Mechanical Engineering, KPR Institute of Engineering and Technology, Coimbatore delivered the Keynote Address on the topic 'Electric Mobility in India'. A number of lectures on various sub-themes delivered by eminent personalities included Mr Veera Ragavan, Managing Director, MRV Ecomotives, Coimbatore on 'Electric Motors- A Brief Discussion'; Mr A Prabhakaran, AP/Auto. Kumaraguru College of Technology, Coimbatore on 'Automotive Electronics for EV Applications'; Mr Sureshkumar R, Automobile Engineering Department, PSG College of Technology, Coimbatore on 'Battery Management Systems for EVs'; Mr K P Devakaran, Automobile Engineering Department, PSG College of Technology, Coimbatore on 'Automotive Sensors Interfacing



for Electric Vehicles' and Dr V M Murugesan, Department of Automobile Engineering, PSG College of Technology, Coimbatore on 'Advanced Electrical System for Modern EVs'. Earlier, Mr P R Natarajan, Chairman, Coimbatore Local Centre delivered the welcome address. Papers were presented and discussed during various technical sessions of the Seminar, which include; sustenance of electric mobility, automotive electronics for electric vehicle applications, battery management systems, automotive sensor interface for electric vehicles, advanced electrical systems for electrical vehicles etc.

IEI DIARY



Aerospace Engineering Division

All India Seminar on "Computational & Non-Computational Tools Involved in Aircraft Engine and Structural Health Monitoring System"

Coimbatore, February 05-06, 2020

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG College of Technology Campus, Peelamedu, Coimbatore 641004 [☎: (0422) 2580733; e-mail: coimbatorelc@ieiindia.org]

All India Seminar on "Issues and Challenges in Aviation Industry"

Jaipur, February 08-09, 2020

The Honorary Secretary, IEI, Rajasthan State Centre, Gandhi Nagar, Tonk Road, Jaipur 302015 [☎: (0141) 2706327; Telefax: (0141) 2700413; e-mail: rajasthansc@ieiindia.org]

One Day Seminar on "Micro and Nano Air vehicles and their sensors"

Gwalior, April 05, 2020

The Honorary Secretary, IEI, Gwalior Local Centre, Green Park, Engineers Road, Near New Collectorate, City Centre, Gwalior 474011; e-mail: gwaliorlc@ieiindia.org]

Thirty-fourth National Convention of Aerospace Engineers on "Advances in Aerospace Engineering"

Kanpur, November 09-10, 2020

The Honorary Secretary, IEI, Kanpur Local Centre, Engineers Bhawan, HBTI East Campus, Nawabganj, Kanpur 208002 [Telefax: (0512) 2560034; e-mail: kanpurlc@ieiindia.org]

Agricultural Engineering Division

One Day Seminar on "Smart Irrigation System using Intelligent Techniques"

Salem, February 05, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieiindia.org]

National Conference on "Agriculture and Smart Villages for Sustainable Development"

Bengaluru, February 07-08, 2020

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

Thirty-fourth National Convention of Agricultural Engineers on "Prospects and Challenges for Agricultural Engineering to Ensure Sustainable Agricultural Production and Doubling Farmers Income"

Goa, June 12-13, 2020

The Honorary Secretary, IEI, Goa State Centre, D Type Quarters, D-8-1 Government Polytechnic

Campus, Altinho, Panaji, Goa 403001 [☎: (0832) 2434686; e-mail: ieigoasc@ieiindia.org]

International Conference on "Prospects and Challenges of Mechanization towards Economy and Sustenance of Global Sugarcane and Sugar Production"

Bangalore, July 03 - 04, 2020

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

Architectural Engineering Division

All India Seminar on "Heritage Architecture"

Jodhpur, February 29-March 01, 2020

The Honorary Secretary, IEI, Jodhpur Local Centre, Residency Road, Jodhpur 342011 [☎: (0291)2432708; e-mail: jodphurc@ieiindia.org]

One Day Seminar on "Sustainable Architectural Development"

Raipur, April 10, 2020

The Honorary Secretary, IEI, Chhattisgarh State Centre, National Institute of Technology Campus, G E Road, Raipur 492010 [☎: (0771)2254625; e-mail: chhattisgarhsc@ieiindia.org; website: www.ieicg.org]

International Conference on "Architectural Innovations: Engineering, Technology and Materials"

Jaipur, May 08-10, 2020

The Honorary Secretary, IEI, Rajasthan State Centre, Gandhi Nagar, Tonk Road, Jaipur 302015 [☎: (0141) 2706327; Telefax: (0141) 2700413; e-mail: rajasthansc@ieiindia.org]

Thirty-sixth National Convention of Architectural Engineers on "Comfort and Energy Efficiency in Built Environment"

Tiruchirappalli, October 09-10, 2020

The Honorary Secretary, IEI, Tiruchirappalli Local Centre, Near Ganesa Bus Stop, BHEL Main Office Road, Opposite to 79 Building, Tiruchirappalli 620014 [☎: (0431) 2554285/2574022; e-mail: tiruchirappalllc@ieiindia.org]

Chemical Engineering Division

One Day Workshop on "Application of ASPEN Plus for Process Design and Simulation"

Pune, February 15, 2020

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

All India Seminar on "Existing Scenario in Chemical and Petrochemical Engineering Sources for Sustainable Development"

Salem, February 17-18, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieiindia.org]

International Conference on "Technologies for Manufacturing Less Polluting and Green Crackers"

Madurai, July 03-04, 2020

The Honorary Secretary, IEI, Madurai Local Centre, Er T M Jambulingam Bhavan, No. 1, Vivekananda Nagar, 120 Feet Road, Surveyor Colony, K Pudur, Madurai 625007 [☎: (0452) 4373067; e-mail: madurailc@ieiindia.org]

Thirty-sixth National Convention of Chemical Engineers on "Frontier Technologies for 21st Centuries Process Industries"

Durgapur, September 11-12, 2020

The Honorary Secretary, IEI, Durgapur Local Centre, Nehru Avenue, B-Zone, Durgapur 713205 [Telefax: (0343) 2564770; e-mail: durgapurc@ieiindia.org]

Civil Engineering Division

One Day Workshop on "Cost Effective and Eco-friendly Construction Technology"

Kanchepuram, February 12, 2020

The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology - ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [e-mail: kanchepuramc@ieiindia.org]

All India Seminar on "Novel Technologies On Artificial Ground Water Recharge Methods And Applications"

Salem, March 05-06, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieiindia.org]

International Conference on "Disaster Mitigation and Management in Global Context"

Bhubaneswar, March 7-8, 2020

The Honorary Secretary, IEI, Odisha State Centre, Sachivalaya Marg, Unit-IV, Bhubaneswar 751001 [☎: (0674) 2390291, Telefax: (0674) 2390630; e-mail: odishasc@ieiindia.org]

International Conference of Civil Engineers on "Smart and Sustainable Infrastructure"

Nagpur, March 20-21, 2020

The Honorary Secretary, IEI, Nagpur Local Centre, North Ambazari Road, Nagpur 440010 [☎: (0712) 2556231/2525617/2554387; e-mail: nagpurc@ieiindia.org; website: www.ieingp.org]

All India Seminar on "Alternate Building Materials and Methods in Civil Engineering"

Bangalore, 24-25 April 2020

The Honorary Secretary, IEI, Karnataka State Centre, No. 3, Dr. B R Ambedkar Veedhi,



Bangalore 560001 [☎: (080) 22264698; Telefax: 080-22256191; e-mail: karnatakasc@ieindia.org; www.ieiksc.org]

International Conference on "Building the Disaster Resilient Society in BIMSTEC Countries"
Agartala, July 10-12, 2020

The Honorary Secretary, IEI, Tripura State Centre, Pandit Nehru Complex, Near Tripura Housing Board, PO: KUnjaban, PB No. 139, West Tripura, Agartala 799006 [☎: (0381) 2304700; email: tripurasc@ieindia.org; web: www.ieitripura.org]

Thirty-sixth National Convention of Civil Engineers on "Innovation, Mechanisation and Modern Techniques in Civil Engineering"
Ranchi, September 08-09, 2020

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Doranda, Ranchi 834002 [☎: (0651) 2491344; e-mail: jharkhandsc@ieindia.org; website: www.ieijsc.org]

Computer Engineering Division

One Day Seminar on "Virtual Reality And Augmented Reality In Robot Training" on 13/02/2020

Kanchepuram, February 13, 2020
The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology - ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [e-mail: kanchepuramlc@ieindia.org]

Thirty-third National Convention of Computer Engineers on "Applied Computational Intelligence and Informatics"
Jaipur, February 15-16, 2020

The Honorary Secretary, IEI, Rajasthan State Centre, Gandhi Nagar, Tonk Road, Jaipur 302015 [☎: (0141) 2706327; Telefax: (0141) 2700413; e-mail: rajasthansc@ieindia.org]

National Conference on "Future Trends in Virtual Reality and Augmented Reality for Education"
Salem, February 20-21, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieindia.org]

One Day Workshop on "Cyber Disease, Ethical Hacking and Cyber Forensics"

Kanchepuram, March 03, 2020
The Honorary Secretary, IEI, Kanchepuram Local Centre, Agni College of Technology - ACT, Old Mahabalipuram Road, Thalambur, Chennai 600130 [e-mail: kanchepuramlc@ieindia.org]

Electrical Engineering Division

All India Seminar on "Recent Trends and Development in National and International Power Sector"

Ghaziabad, February 07-08, 2020
The Honorary Secretary, IEI, Ghaziabad Local Centre, 15 Shopping Complex, A L T T Centre, Raj Nagar, Ghaziabad 201002 [☎: (0120) 2702673; e-mail: ghaziabadlc@ieindia.org; website: www.ieiglrc.org]

One Day Seminar on "Standalone Photovoltaic Power Conversion Systems For Rural Electrification"

Kattankulathur, February 14, 2020
The Honorary IEI, Kattankulathur Local Centre, SRM Institute of Science and Technology, Mahatma Gandhi Road, Potheri, SRM Nagar, Dist Chengalpattu, Kattankulathur, Tamilnadu 603203 [☎: 044-2745 2270; kattankulathurc@ieindia.org]

All India Seminar on "Policies of Governments, Paradigms Challenges and Opportunities of Sustainable Electrical Power in India"

Hyderabad, February 19-20, 2020
The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad 500004 [☎: (040) 23314969; e-mail: telanganasc@ieindia.org; website: ieitsc.org]

One Day Workshop on "Energy Conservation and Management in Process Industries",

Bokaro, February 23, 2020
The Honorary Secretary, IEI Bokaro Steel City Local Centre, Abhiyanta Bhawan, Sector 5-A, Bokaro Steel City 827006 [☎: (06542) 267227; e-mail: bokarolc@ieindia.org]

One Day Seminar on "Monitoring and Controlling of Power Transmission and Distribution using SCADA of Salem Corporation"

Salem, February 28, 2020
The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieindia.org]

All India Seminar on "Load Management in Electrical Power Systems in India"

Hyderabad, March 18-19, 2020
The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad 500004 [☎: (040) 23314969; e-mail: telanganasc@ieindia.org; website: ieitsc.org]

One Day Workshop on "Disaster Management in Power Generation Plants"

Gwalior, March 29, 2020
The Honorary Secretary, IEI, Gwalior Local Centre, Green Park, Engineers Road, Near New Collectorate, City Centre, Gwalior 474011; e-mail: gwaliorlc@ieindia.org]

All India Seminar on "Smart Grids in Integration with Distributed Generation Challenges and Solutions"

Salem, March 27-28, 2020
The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieindia.org]

National Seminar on "Role of Renewable Energy for reducing Greenhouse Gas Emissions and Conservation of Energy"

Faridabad, April 10-11, 2020

The Honorary Secretary, IEI, Faridabad Local Centre, Qtr No. 45 YMCA University of Science & Technology, 1st Floor, Sector 6, Faridabad 121006 [☎: (0129) 4100798; e-mail: faridabadlc@ieindia.org; web: www.ieifbdlc.in]

All India Workshop on "Smart Grid Technologies- Operation, Control and Recent Deployments"

Tiruchirappalli, June 12-13, 2020
The Honorary Secretary, IEI, Tiruchirappalli Local Centre, Near Ganesa Bus Stop, BHEL Main Office Road, Opposite to 79 Building, Tiruchirappalli 620014 [☎: (0431) 2554285 / 2574022; e-mail: tiruchirappalllc@ieindia.org]

Thirty-sixth National Convention of Electrical Engineers on "Future Electricity Systems: Challenges and Current Trends"

Jodhpur, November 28-29, 2020
The Honorary Secretary, IEI, Jodhpur Local Centre, Residency Road, Jodhpur 342011 [☎: (0291) 2432708; e-mail: jodhpurc@ieindia.org]

Electronics and Telecom. Engineering Division

One Day Workshop on "Recent Trends and Opportunities in Optics Photonics"

Kattankulathur, February 06, 2020
The Honorary IEI, Kattankulathur Local Centre, SRM Institute of Science and Technology, Mahatma Gandhi Road, Potheri, SRM Nagar, Dist Chengalpattu, Kattankulathur, Tamilnadu 603203 [☎: 044-2745 2270; kattankulathurc@ieindia.org]

One Day Workshop on "Machine Learning and Internet of Things"

Pune, February 14, 2020
The Honorary Secretary, IEI, Pune Local Centre, Abhiyanta Bhavan, 1332, J M Road, Shivajinagar, Pune 411005 [☎: (020) 25533376 / 25520239 / 25530250; e-mail: punelc@ieindia.org; web: www.ieipune.org]

All India Workshop on "Nanosensors for Medical Applications"

Tiruchirappalli, March 04-05, 2020
The Honorary Secretary, IEI, Tiruchirappalli Local Centre, Near Ganesa Bus Stop, BHEL Main Office Road, Opposite to 79 Building, Tiruchirappalli 620014 [☎: (0431) 2554285/2574022; e-mail: tiruchirappalllc@ieindia.org]

All India Workshop on "Advanced Microprocessor Arduino In Biomedical Applications"

Salem, March 18-19, 2020
The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemc@ieindia.org]

All India Seminar on "Video Processing and Analytics"

Bangalore, April 10-11, 2020
The Honorary Secretary, IEI, Karnataka State Centre, No. 3, Dr. B R Ambedkar Veedhi, Bangalore 560001 [☎: (080) 22264698; Telefax: 080-22256191; e-mail: karnatakasc@ieindia.org; www.ieiksc.org]

Environmental Engineering Division

All India Seminar on "Sources of Planet Energy & Environmental Disaster Science: Impact of Non Conventional Energy Resources"

Lucknow, February 07-08, 2020

The Honorary Secretary, IEI, Uttar Pradesh State Centre, Engineers' Bhawan, River Bank Colony, Lucknow 226018 [☎: (0522) 2625322; e-mail: upsc@ieindia.org; website : www.ieiup.org]

All India Seminar on "Sustainable Energy Technologies"

Kanpur, February 08-09, 2020

The Honorary Secretary, IEI, Kanpur Local Centre, Engineers Bhawan, HBTI East Campus, Nawabganj, Kanpur 208002 [Telefax: (0512) 2560034; e-mail: kanpurlc@ieindia.org]

One Day Seminar on "Urban Water Management Scenario: Issues and Challenges"

Erode, February 14, 2020

The Honorary Secretary, IEI, Erode Local Centre, Texvalley Campus, Gangapuram, Erode 638 102 [e-mail: erodelc@ieindia.org]

All India Seminar on "Monitoring And Control of Air Pollution in Manufacturing Industries"

Salem, June 19-20, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemclc@ieindia.org]

Thirty-sixth National Convention of Environmental Engineers on "Waste Recycling and Reuse"

Kochi, August 07-08, 2020

The Honorary Secretary, IEI, Kochi Local Centre, Govt. Homeo Hospital Road, Near Pullepady Railway Over Bridge (East Side), P.O. Kaloor, Kochi 682017 [☎: (0484) 2403838 /3993 e-mail: kochilc@ieindia.org; website: www.ieikochi.org]

Marine Engineering Division

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

Visakhapatnam, August 28-29, 2020

The Honorary Secretary, IEI, Visakhapatnam Local Centre, 9-12-31/1, Beside A U Engineering College Girls Hostel, Visakhapatnam 530003 [☎: (0891) 2747460; e-mail: visakhapatnamlc@ieindia.org; web: www.ieivisakhapatnam.org]

Mechanical Engineering Division

All India Seminar on "Revolutions in Ecofriendly Vehicles"

Madurai, February 05-06, 2020

The Honorary Secretary, IEI, Madurai Local Centre, Er T M Jambulingam Bhavan, No. 1, Vivekananda Nagar, 120 Feet Road, Surveyor Colony, K Pudur, Madurai 625007 [☎: (0452) 4373067; e-mail: madurailc@ieindia.org]

All India Seminar on "Energy Optimization in HVAC & R Industry"

Ranchi, February 08-09, 2020

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Doranda, Ranchi 834002 [☎: (0651) 2491344; e-mail: jharkhandsc@ieindia.org; website: www.ieijsc.org]

All India Seminar on "MATLAB for Mechanical Engineers"

Bangalore, February 13-14, 2020

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

One Day Workshop on "Emerging Trends in Refrigeration and Air-conditioning"

Pune, February, 22, 2020

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

All India Seminar on "Manufacturing and Quality Engineering: Industrial Perspective"

Kolkata, February 27-28, 2020

The Honorary Secretary, IEI, West Bengal State Centre, 8 Gokhale Road, Kolkata 700 020 [☎: (033) 22233140; e-mail: wbsc@ieindia.org; website : iewbse.org]

All India Workshop on "Finite Element Method Applications for Mechanical Engineering and Science using MATHEMATICA"

Kadapa, February 28-29, 2020

The Honorary Secretary, IEI, Kadapa Local Centre, APHB Colony, Prakash Nagar, Kadapa 516004 [☎: 085562 245808; e-mail: kadapalc@ieindia.org; website: www.ieikadapa.org]

All India Seminar on "Advances in Welding and Joining Processes"

Bangalore, March 02-03, 2020

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

All India Seminar on "Optimization of Engine Design and Operating Variables to Control Emissions"

Coimbatore, March 19-20, 2020

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG College of Technology Campus, Peelamedu, Coimbatore 641004 [☎: (0422) 2580733; e-mail: coimbatorelc@ieindia.org]

Thirty-sixth National Convention of Mechanical Engineers, on "Innovations in Thermal Science and Engineering"

Agartala, September 05-06, 2020

The Honorary Secretary, IEI, Tripura State Centre, Pandit Nehru Complex, Near Tripura Housing

Board, P. O. Kunjaban, PB No 139, Agartala 799 006 [☎: (0381) 2304700; Fax: (0381) 2304700; e-mail: tripurasc@ieindia.org]

Thirty-seventh National Convention of Mechanical Engineers on "Application of IoT and Big Data in Manufacturing and Associated Field"

Delhi, September 10-11, 2021

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, 2 Bahadurshah Zafar Marg, New Delhi 110002 [☎: (011) 23379052 / 23379948; e-mail: delhisc@ieindia.org; website: www.ieidsc.in]

Metallurgical & Materials Engg. Division

All India Workshop on "Materials Informatics and Soft Computing Application using Machine Learning and FEA Analysis"

Salem, February 06-07, 2020

The Honorary Secretary, IEI, Salem Local Centre, 104/7, Manivannan Street, 3rd Floor, SPC Bhawan, Opp to Salem New Bus Stand, Salem 636004 [☎: (0427) 2415224; e-mail: salemclc@ieindia.org]

One Day Seminar on "Friction Stir Processing"

Ahmedabad, February 15, 2020

The Honorary Secretary, IEI, Gujarat State Centre, Bhaikaka Bhavan, Near Law Garden, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Telefax : (079) 26561825; e-mail: gujaratasc@ieindia.org; website : www.ieigujarat.org]

All India Seminar on "Advancement in Steelmaking Rolling Technology: Smart Initiative for Special Steel"

Ranchi, March 28-29, 2020

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Doranda, Ranchi 834002 [☎: (0651) 2491344; e-mail: jharkhandsc@ieindia.org; website: www.ieijsc.org]

All India Seminar on "Green Technologies for Iron and Steel Production"

Bokaro, September 06-07, 2020

The Honorary Secretary, IEI Bokaro Steel Local Centre, Abhiyanta Bhawan, Sector 5-A, Bokaro Steel City 827006 [☎: (06542) 267227; e-mail: bokarolc@ieindia.org]

Mining Engineering Division

International Conference on "Technological Advancement and its Management in Mining Excavation Sectors"

Dhanbad, September 09-12, 2020

The Honorary Secretary, IEI, Dhanbad Local Centre, Camp Office: C/O Prof P Bandopadhyay, Co-operative Society Colony, Kusum Vihar, P.O.: BCCL Township, Koyla Nagar, Dhanbad 826005 [Mob: 9934896322 / 8789853083]

Production Engineering Division

One Day Workshop on "Implication of Machine Learning in Smart Manufacturing: Challenges and Opportunities"

Coimbatore, February 22, 2020

The Honorary Secretary, IEI, Coimbatore Local

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Contribution for Centenary Celebrations of

The Institution of Engineers (India)

The Institution of Engineers (India) has entered its next Century in September 2019 and we intend to celebrate this significant landmark in a befitting manner. Various International Seminars are being organized in India and Overseas on contemporary and innovative themes culminating in Global Engineering Congress next year. Also, IEI has launched a special outreach programme to induct new members into its' fold along with an image enhancement programme to project the Institution both nationally and globally.

For this purpose, an IEI Centenary Fund has been established and the finances accrued by way of donation/sponsorship would be utilized to organize various events in the Centenary Year.

The contribution made under this section is exempted as per Section 80G of the Income Tax Act 1961, if made by cheque/draft/NEFT.

Details of IEI Centenary Fund are as follows.

Name of the Fund	IEI Centenary Fund
Bank	HDFC Bank
A/c No	50100301303426
IFSC Code	HDFC0000469

IEI Join Hands with Various Certification Bodies to Nurture Engineers

IEI and The Institute of Cost Accountants of India have signed a MoU on 27 May 2019, Kolkata, to offer a course exclusively for engineers- "Executive Diploma in Cost & Management Accounting for Engineers". Here is a wonderful opportunity for all corporate members of IEI to enhance knowledge in the domain of finance and understand the framework of costing, accounting system etc. in various decision making processes.

IEI also ties up with Project Management Associates (PMA), on 3 Jun 2019, at Chennai, in an exclusive collaboration to build a project mindset through Project Management education "IPMA's level C and D Certification Programme" in the country. The program offers a golden opportunity for project professionals to acquire key knowledge and concepts in Project Management, based on the approach followed by the world's leading authority on competence based Project, Program & Portfolio Management- International Project Management Association (IPMA)

IEI members have the exclusive facility of enrolling in the courses at a discounted fee!

For details, Corporate Members may login to their respective dashboard (<https://www.ieindia.org/WebUI/IEI-Registration.aspx>) and submit their application under Certification --> IPMA.

Please visit www.ieindia.org under Certification for details.

For further clarification you may call at: 033-40106304 or Email at certification@ieindia.org

IEI Diary

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Centre, PSG College of Technology Campus, Peelamedu, Coimbatore 641004 [☎: (0422) 2580733; e-mail: coimbatorelc@ieindia.org]

All India Seminar on "Emerging Trends in Service Robotics"

Coimbatore, March 09-10, 2020

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG College of Technology Campus, Peelamedu, Coimbatore 641004 [☎: (0422) 2580733; e-mail: coimbatorelc@ieindia.org]

Thirty-fifth National Convention of Production Engineers on "Emerging Technologies for Sustainable Manufacturing"

Durgapur, May 23-24, 2020

The Honorary Secretary, IEI, Durgapur Local Centre, Nehru Avenue, B-Zone, Durgapur 713205 [Telefax: (0343) 2564770; e-mail: durgapurlc@gmail.com; website: ieidurgapurlc.org]

Textile Engineering Division

International Conference on "Innovative Approaches for the Development of Sustainable Textile Products and Processes"

Kolkata, February 09-10, 2020

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

Thirty-third National Convention of Textile Engineers on "Two Decades of Nanotechnology in Textile: Progress and Prospects"

Ahmedabad, February 20-21, 2020

The Honorary Secretary, IEI, Gujarat State Centre, Bhaikaka Bhavan, Near Law Garden, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Telefax: (079) 26561825; e-mail: gujaratssc@ieindia.org; website: www.ieigujarat.org]

All India Seminar on "Industrial Textiles and Characterisation"

Coimbatore, March 27-28, 2020

The Honorary Secretary, IEI, Coimbatore Local Centre, PSG College of Technology Campus, Peelamedu, Coimbatore 641004 [☎: (0422) 2580733; e-mail: coimbatorelc@ieindia.org]

Interdisciplinary

One Day Seminar on "Energy Efficiency and use Devices Performance Monitoring and Measurement through Online Tools"

Delhi, February 14, 2020

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, 2 Bahadurshah Zafar Marg, New Delhi 110002 [☎: (011) 23379052 / 23379948; e-mail: delhisc@ieindia.org; web: www.ieidsc.in]

Other Events

International Conference on "Energy and Sustainable Development 2020"

Kolkata, February 14-15, 2020

Jointly by IEI and Department of Mechanical Engineering, Jadavpur University under support from Rashtriya Uchchatar Shiksha Abhiyan. For further queries write to icesd20@gmail.com



The Institution of Engineers (India)

IEI YOUNG ENGINEERS AWARD 2020-21

Notification

The Institution of Engineers (India) is a multi-disciplinary professional body of engineers with 15 engineering disciplines and over 8,00,000 members in India and abroad. The Institution was established in 1920 and was incorporated by Royal Charter in 1935. It has been in the forefront of engineering profession addressing the socio engineering problems for progress of the country. IEI functions among professional engineers, academicians, research workers to update their professional knowledge through continuous professional development. With its large international linkages and a network of 125 Centres in India and Six Overseas Chapters, the Institution has built up wide reach and large infrastructure to meet its objectives of promoting engineering in all aspects.

With a view to promote the pursuit of excellence in the field of engineering, IEI has instituted 'IEI Young Engineers Award'. The Award consists of a Plaque and a Certificate. The purpose of the Award is to recognize outstanding achievements/contributions made by young engineers in engineering research, excellence in engineering technology development, technology transfer, etc. Any engineer citizen of India not older than 35 years of age as on March 31, 2020 is eligible for the Award. The IEI Young Engineers Award is presented to awardees for all the 15 Engineering Divisions of the IEI during the respective National Conventions. The awardees attending the National Convention will be provided with free accommodation & their traveling expenses (AC-3 Tier train fare by shortest route) will be reimbursed on production of original documents.

The Application Proforma may be downloaded from IEI website (<https://www.ieindia.org>). Soft copy of the filled-in application proforma should be forwarded to award@ieindia.org by March 31, 2020. Further, six copies of the duly filled application form, along with all supporting documents, endorsed by appropriate authority should be sent to the below mentioned address so as to reach us latest by April 10, 2020:

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

The envelope containing the application should be superscribed at the top as 'IEI Young Engineers Award 2020-2021' and name of the engineering division under which the applicant desires to be considered for the Award.

STILL NOT A MEMBER OF IEI ?

BE A CORPORATE MEMBER OF IEI. FOR FURTHER DETAILS PLEASE FOLLOW THE LINK :- <https://www.ieindia.org/webui/iei-Memb.aspx#download>

Important Notice

It has been observed that there are many Corporate Members of IEI whose mobile number/email id is not registered with IEI till date. Non availability of the mobile numbers and email ids precludes us not only from providing our full range of services but also from participation in the Online Election Process.

The Corporate Members whose mobile number/email id is not registered with IEI are therefore requested to kindly communicate their mobile no. and email id along with membership number to datamemb@ieindia.org by 10 February 2020.

For any further clarification, one may feel free to speak to us at (033)40106248/ 246/ 269/ 299.

Maj Gen (Dr) S Bhattacharya, VSM (Retd)
Secretary and Director General

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