

**Fundamentals and Trends** in Additive Manufacturing

**Renewable Energy Generation** and Its Challenges

**Industrial Waste Management in India** 

**Fuel Cells and Hybrid** Vehicle Technology

**IEI Diarv** 

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97 YEARS OF RELENTLESS JOURNEY TOWARDS ENGINEERING ADVANCEMENT FOR NATION-BUILDING

Volume 67 Number 6

**Thirty-third National Convention of Environmental Engineers, Dhanbad** 

## **Status of Technological Advancement** to Meet the Environmental Norms for **Indian Mining and Allied Industries**

**Dhanbad Local Centre** of the Institution in association with Director General of Mines Safety (DGMS), Government of India, Dhanbad organized the Thirty-third National Convention of Environmental Engineers and National Seminar on the theme 'Status of Technological Advancement to Meet the Environmental Norms for Indian Mining and Allied Industries' during August 24-25, 2017 at Dhanbad. The Chief Guest, Mr P K Sarkar, Director General of Mines Safety (DGMS), Dhanbad, in his inaugural address, emphasized upon the present scenario of environmental norms related to mining sector. He also highlighted the scope of implementation of renewable energy in the country in a bigger way. To minimize the adverse effects of pollution on environment due to mining, Mr Sarkar stressed that Environmental Act should be followed strictly by all the stakeholders. The Guest-of-Honour, Mr A Dodde, Deputy Commissioner, Dhanbad, while addressing the gathering, cautioned about the current happenings of environmental degradation in the country. He stated that for making the roads wider, alternative technology for removing trees/plants from the road side may be adopted. Mr Sanjay Sen, Chairman, Environmental Engineering Division Board, IEI, presided over the inaugural session and briefed about the



background of this important Engineering Division of IEI and its various activities. On this occasion, a Proceedings and Souvenir of the Convention were brought out which were released by the Chief Guest. Dignitaries, namely, Mr K Nageswara Rao, Deputy DGMS (DDGMS), Central Zone, Dhanbad; Mr G L Kanta Rao, DDGMS (Electrical) and Mr B P Singh, DDGMS (Mining) graced the occasion as the Special Guests and addressed the gathering. The prestigious 'N V Modak Memorial Lecture' was delivered by Prof V P Sharma, Head, Department of Petroleum Engineering, IIT-ISM, Dhanbad, on the topic 'Environment Health and Safety Issues Related to Petroleum Industries'. Prof Asis Mazumder, Director, School of Water Resources

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

It is a matter of pride that The Institution of Engineers (India) is celebrating the 50th Engineers' Day to commemorate the birthday of legendary engineer Sir Mokshagundam Visvesvaraya on September 15, 2017. Due to his outstanding contribution to society, the Government of India conferred 'Bharat Ratna' on this legend in 1955. He was also the precursor of economic planning in India. His learned discourses on 'Economic Planning in



India', 'Planned Economy for India' and 'Reconstructing India', were the first available documents on the planning effort of the country and are still consulted by economic planners. This year, the theme of the 50th Engineers' Day is 'Role of Engineers in a Developing India' and activities will be organized at various State & Local Centres of the Institution all over the country based on this theme.

Another important event, Safety Convention 2017 is scheduled to be organised on the theme 'Industrial Safety with Focus on Manufacturing Excellence', by Delhi State Centre under the aegis of Safety and Quality Forum of IEI during September 6 - 8, 2017. Industrial safety in the context of occupational safety and health refers to the management of all operations and events within an industry for protecting its employees and assets by minimizing hazards, risks, accidents and near misses. Industrial safety covers a number of issues and topics affecting safety of personnel and equipment in a particular industry which includes: General Safety, Occupational Safety and Health; Process and Production Safety; Material Safety; Workplace Safety; Fire Safety; etc. Manufacturing excellence is an explicit goal of any organization which requires that manufacturers instill and constantly reinforce within the organization the principle that everybody should know their customers well and should cater to their requirements.

In addition, three important National Conventions are scheduled to be organized during September 2017. The 33rd National Convention of Mechanical Engineers on the theme 'Advances in MEMS and Robotics in Manufacturing Industries' will be organised by the Udaipur Local Centre during September 1 - 2, 2017 at Udaipur. The Gujarat State Centre is organizing the 33rd National Convention of Civil Engineers on the theme 'Recent Advances in Structural Engineering', during September 2 - 3, 2017 at Ahmedabad. The 33rd National Convention of Chemical Engineers on 'Nano-technology and its Application for Sustainable Development in Chemical Industries' is scheduled to be organized by the Pune Local Centre during September 9 - 10, 2017.

I am happy to note that with the whole hearted cooperation and efforts of Council Members, Corporate Members including the Chairmen and Honorary Secretaries of various State & Local Centres and other stakeholders, there has been a marked increase in the technical activities covering contemporary topics. I look forward to your participation in these technical activities which will help in enriching the engineering fraternity through sharing of ideas.

## Fundamentals and Trends in Additive Manufacturing

**Gujarat State Centre** of the Institution in association with IEI Students' Chapter (Mechanical Engineering), Vishwakarma Government Engineering College, Chandkheda, Ahmedabad and Marwadi Education Foundation,

Rajkot organized a two-day All India Seminar on the theme 'Fundamentals and Trends in Additive Manufacturing' under the aegis of Mechanical Engineering Division, IEI, during July 21-22, 2017 at Ahmedabad. Dr U Chandrasekhar, Pro Vice Chancellor, Veltech University, Chennai and Dr R K Gajjar, Principal, Vishwakarma Government Engineering College, Ahmedabad, graced the occasion as the Chief Guest and Guest-of-Honour, respectively. Dr U Chandrasekhar, in his address, appreciated the host Centre for choosing such an important topic of the Seminar on additive manufacturing and 3D printing technology. He mentioned that now-a-days 3D printing technology is used for preparing the white cap for dental treatment, jewellery designing, cosmetic treatment etc and it will be integrated with our daily routine life. He hoped that in near future, studies in 3D printing technology will be started from school level for designing. Dr R K Gajjar, in her address, advised the students to become updated by adopting latest technological knowledge and improve themselves everyday by reading habits, adopting latest knowledge etc. She further emphasized that learning must always continue

and requested the participants to clear all their queries about additive manufacturing and 3D printing technology. Earlier, Mr S J Desai, Immediate Past Chairman of the Centre and Council Member, IEI, welcomed the august gathering. In his address, Mr Desai highlighted various activities

of the Institution and spoke about the benefits of becoming member of IEI. Mr Shyam Varghese, Joint Honorary Secretary of the Centre, briefed about the theme of the Seminar. The programme was concluded with the vote of thanks proposed by Mr K H Udhavdas, Honorary Secretary of the Centre. A large number of papers embracing the theme of the Seminar, such as, Additive Manufacturing: Scope & Opportunities; Materials used in Additive



Manufacturing; Additive Layer Manufacturing; Fundamentals of Additive Manufacturing and 3D Printing Technology; Current Research, Application & Avenues in FDM, etc, were presented and discussed during technical sessions.

## **Environmental Impact, Current Status of Fossil Fuels and Need for PV Power Generation**

Salem Local Centre of the Institution in association with the Department of Electrical and Electronics Engineering, Selvam College of Technology organized a two-day All India Seminar on the theme 'Environmental Impact, Current Status of Fossil Fuels and Need for PV Power Generation' under the aegis of Electrical Engineering Division, IEI, during July 27-28, 2017 at Namakkal, Tamilnadu. Mr K Pandian, Chairman of the Centre, welcomed the august gathering and explained the benefits of IEI memberships of various grades and the financial support provided by the Institution for conducting events like, Seminars, Workshops, Conferences, etc and for R&D projects. Dr P Selvaraj, B V Sc, Chairman, Selvam Group of Institutions, Namakkal, while presiding over the inaugural session, appreciated the IEI and the Electrical and Electronics Engineering Department of Selvam College of Technology for selection of such an important topic pertinent to current scenario. Dr P Manimekalai, ASP/EEE & Academic Dean, Selvam College of Technology, highlighted the importance of the theme of the Seminar with a brief introduction about the world energy status and the necessity of using PV power generation. Dr B Kaviethra Nandhini, Secretary, Selvam Group of Institutions, Namakkal, advised the participants to utilize the suggestions of the resource persons of the Seminar to their projects. Dr R Prabhu, Principal, Selvam College of Technology, Namakkal, explained the global

need for switching over to renewable energy sources. He motivated the students to develop small products using renewable energy. Dr Sreejith S, Associate Professor (EEE), VIT University, Vellore, presented an overview



of fossil fuels and its effects on environment. The inaugural session was concluded with the vote of thanks proposed by Mr S R Saravanan, Honorary Secretary of the Centre. Papers embracing the theme of the Seminar were presented and discussed during technical sessions.

## Renewable Energy Generation and Its Challenges

**Odisha State Centre** of the Institution organized a two-day All India Seminar on the theme 'Renewable Energy Generation and Its Challenges' under the aegis of Electrical Engineering Division, IEI during July 22-23, 2017 at Bhubaneswar. Prof (Dr) P K Parhi, Chairman of the Centre, presided over the function and welcomed the dignitaries and delegates. The Chief Guest, Mr Santosh Kumar Mishra, Director, CSIR- Institute of Minerals & Materials

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Technology, Bhubaneswar, Odisha, in his inaugural address, spoke about renewable energy generation of electrical engineering and allied areas. Dr Prakash Kumar Hota, Dean, Center for Distance and Continuing

Education (CDCE) & Professor, Electrical Engineering Department, VSSUT, Burla, graced the occasion as the Chief Speaker. In his speech, Dr Hota highlighted the recent developments taking place in the field of renewable energy sources, like solar, wind, fuel cell and their management through grid. 'Successful operation of these renewable energy systems, their grid integration issues and power quality issues, all combined are heavily

dependent on the latest technology including power electronics' he quoted. He mentioned that development of micro-grids and smart grids with inclusion of renewable energy sources is propelling the technological developments at a faster rate. Dr Hota mentioned that the major goal of smart grid is to promote active customer participation and decision making as well as to create the operation environment in which both utilities and electricity users influence each other. Dr Sudhansu Sekhar Dash, Organizing Secretary, elaborated on growing power generation capacity from renewable energy sources, such as, wind power, hydropower, solar energy, bio-mass, bio-fuel, geothermal energy, wave energy, tidal energy, hydrogen & fuel cells, Li-ion batteries and capacitors etc., in line with future demand. Earlier, Dr Arun Kumar Patnaik, Convener of the Seminar, introduced the theme of the Seminar.

Prof (Dr) K K Rout, Honorary Secretary of the Centre, proposed the vote of thanks. Papers on various sub-themes of the Seminar were presented and discussed during technical sessions.

## Role of Engineers for Sustainable Agriculture: Related to Modern India

**Berhampur Local Centre** of the Institution in association with Gandhi Academy of Technology & Engineering (GATE) and Biju Patnaik University of Technology (BPUT), Odisha, organized All India Seminar on the theme 'Role of Engineers for Sustainable Agriculture: Related to Modern India' under the aegis of Agricultural Engineering Division, IEI during July 28-29, 2017 at



Berhampur. The Chief Guest, Dr Nutan Kumar Dash, Chairman, Agricultural Engineering Division Board of the Institution, emphasized that engineers should reassess and review the present situation thereby to develop the package of practices for better and more agricultural productivity. He advised that engineers should be multi-skilled & versatile in latest technology. The Chief Speaker, Dr Indramani Mishra, Head, Department of Agricultural

Engineering, IARI, PUSA, New Delhi, in his address, exhorted the engineers to come up with innovative ideas that would build up their creativity qualities and agricultural productivity. The Guest-of-Honour, Dr Manoj Kumar Ghosal, Professor, Department of Farm Machinery & Power, College of Agricultural Engineering & Technology (CAET), OUAT, Bhubaneswar, presented in brief about the bare necessity of energy in case of various agricultural operations. While speaking on scarcity of fossil fuel, he advised to develop the animate power sources with blending of imported and indigenous technologies for improved agricultural practice and better crop yield. The Speaker, Dr Pramod Kumar Sahu, Principal Scientist, IARI, PUSA, New Delhi, emphasized on innovation based on the local conditions rather than adapting the foreign

technologies with a view to fulfill the need of present socio-economic requirements of the farming community. He also delivered Invited lecture on 'Status and Prospects of Precision Agriculture Technology in India'. Prof D K Das, former Head, Farm Machinery & Power, CAET, OUAT, Bhubaneswar, in his address spoke about post-harvest mechanization for minimization of agricultural losses and ensuring food security through solar refrigeration mechanism. Earlier, Mr Sanjaya Kumar Moharana, Honorary Secretary of the Centre, presented the introductory speech and Mr Ashutosh Patra, Chairman of the Centre, in his welcome address covered various aspects related to sustainable agriculture. A large number of papers were presented during various technical sessions where deliberations on prospects of precision agriculture technology,

artificial intelligence in agriculture production & processing and many allied areas were taken place. During the Valedictory Session, the Chief Guest, Prof Mohammed Altaf Khan, Registrar of BPUT, Rourkela, highlighted the significant developments taking place in various agricultural practices and operations to ensure more productivity.

# Use of Admixtures and Construction Chemicals in Current Construction Industry

Tamilnadu State Centre of the Institution organized a two-day All India Seminar on the theme 'Use of Admixtures and Construction Chemicals in Current Construction Industry', under the aegis of Civil Engineering Division, IEI, during August 10-11, 2017 at Chennai. Dr G Ranganath, Chairman of the Centre, welcomed the dignitaries present and presided over the inaugural session. Dr V Karthikeyan, Convener of the Seminar, introduced the theme. The distinguished Chief Guest, Mr S Kanappan, Executive Vice-President and Chief Technology Officer, L&T Construction and Head and Chief Executive. L&T Geo-structure, inaugurated the Seminar. In his inaugural address, Mr Kanappan highlighted the needs of chemicals in special underground structures, tunnels and many more projects handled by L&T Geo-structure. The Guest-of-Honour, Mr Samir Surlaker, President, Construction Chemicals Manufactures Association (CCMA) and Vice President, Indian Concrete Institute (ICI), in his Keynote Address, briefed about the current status of construction chemicals industry. He stressed the need for more interaction of construction chemicals manufacturers with other professionals to solve the problems in civil engineering. The Special Guest, Dr A R Santha Kumar, Former Dean, CEG, Anna University, Chennai and Former Emeritus Professor, IIT Madras, emphasized the use of construction chemicals in large scale and fast track constructions. A large number of delegates including builders, government engineers, chemical industrialists, research scholars and students participated in the Seminar. Technical papers embracing the theme of the Seminar were presented and discussed during technical sessions. Experts in the field from Sika, Fosroc, CCP, L&T and Bharathi Cement during their presentation demonstrated the use of chemicals. Mr Kamalakannan ED, Utracon, explained the usage of construction chemicals in pre-stressed structures and invited the delegates to participate actively in the technological developments. Dr B Sivarama Sharma of L&T, spoke about the reduction of global warming and conservation of natural water using construction chemicals. The Chief Guest at the Valedictory Session, Mr R N Krishna, Former Secretary General, Indian Concrete Institute and Deputy Secretary General, Asian Concrete Construction Institute, Singapore, in his address, presented the current state and the need of BIS for the use of construction chemicals in India. He stated that the provision to use other country codes on construction chemicals which are compatible with Indian condition may be permitted by BIS. He informed that many Asian countries are following the Euro codes and found it compatible with their local conditions. Mr R Ramdoss, Honorary Secretary of the Centre, proposed the vote of thanks.

## **Industrial Waste Management in India**

Madurai Local Centre of the Institution jointly with Vickram College of Engineering, Tamilnadu organized a two-day All India Seminar on the theme 'Industrial Waste Management in India', under the aegis of Interdisciplinary Coordination Committee, IEI during August 3-4, 2017 at Madurai. Dr S Vasudevan, Dean, Thiagarajar College of Engineering, graced the occasion as the Chief Guest. In his inaugural address. Dr Vasudevan shared that he attended the Seminar to motivate the budding engineers. 'As engineers, we have to play more roles and there are lot of opportunities and demand in this field' he quoted. He mentioned that we must have social awareness and practical way of thinking which should be bio-friendly, socially relevant and environmentally helpful. 'It gives us reorganization and satisfaction and this is how we also develop entrepreneurship', opined Dr Vasudevan. Mr K Vijayakumar, Chairman of the Centre, presided over the inaugural session. Mr Vijayakumar, in his address, explained the importance of the topic with reference to industrialization of our country. He enumerated that the wastes are created by the industries and we have to reduce, recycle and reuse them



by efficient management system. Earlier, Dr S Nagarajan, Principal, Vickram College of Engineering, delivered the welcome address. Mr J Samuel, Honorary Secretary of the Centre, proposed the vote of thanks. Technical papers embracing the theme of the Seminar were presented and discussed during technical sessions.

## Status of Technological Advancement to Meet the Environmental Norms for Indian Mining and Allied Industries

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Engineering, Jadavpur University, Kolkata, delivered the State-of-the-Art Lecture on 'Environmental Risk of Mining and its Mitigation'. On this occasion, four Eminent Engineering Personalities, namely, Dr T N Singh, President, Centre of Eco-friendly Mining Alternatives, Dhanbad & former Director, CSIR- Central Institute of Mining & Fuel Research, Dhanbad; Prof S Kanmani, Director, Centre for Environmental Studies, Department of Civil Engineering, Anna University, Chennai; Mr N P Srivastava, Assistant General Manager (Environment), Environment Control Department, SAIL-Bokaro Steel Plant and Mr R N Bhargava, Chairman, Ecomen Lab. Pvt. Ltd., Lucknow (in absentia) were felicitated for their valuable contribution in the field of Environmental Engineering. The 'IEI Young Engineers Award' in the

field of environmental engineering for the year 2017-18 was presented to Dr P Senthil Kumar, Associate Professor, Department of Chemical Engineering, SSN College of Engineering, Chennai; Dr L M Pandey, Assistant Professor, Department of Bioscience & Bioengineering, IIT Guwahati; and Mr A K Yadav, Researcher, Department of Mining Engineering, IIT-BHU, Varanasi. Dr Anil Kumar, Deputy Director General, IEI, highlighted various aspects of Professional Engineers (PE/IntPE) of IEI. Earlier, Mr D B Naik, Chairman of the Centre & DDGMS (Mechanical), welcomed the dignitaries and participants and elaborated the theme of the Convention. Dr K K Singh, IIT-(ISM) Dhanbad and Honorary Secretary of the Centre, proposed the vote of thanks. A large number of papers on various sub-themes of the National Seminar were presented and discussed during technical sessions.

## **NEWS-IN-BRIEF**

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

#### **STATE CENTRES**

#### Gujarat

- Seminar on 'Intellectual Property Rights (IPR)' on August 26, 2017.
- Celebrated '58th Foundation Day' of the Centre on September 1, 2017.

#### Haryana

 Workshop on 'Theory & Practices in Refrigeration and Air Conditioning System' on August 5, 2017.

#### **Jharkhand**

• Workshop on 'Bulk Material Handling' on July 13, 2017.

#### **Puducherry**

• Celebrated 'World Environment Day' on July 15, 2017.

#### Telangana

 Lecture on 'Serving Society and Mankind – Role of an Engineer' delivered by Dr G Chandra Mohan Reddy, Professor, Mechanical Engineering, Principal, MGITG, Hyderabad, on July 27, 2017.

#### **Uttar Pradesh**

 Lecture on 'Satellite Navigation in Indian Perspective' delivered by Mr S N Sahoo, Scientist-F, ISRO Telemetry Tracking & Tele-Command Network on August 28, 2017.

#### **West Benga**

- Seminar on 'Modern Technology for Safe and Efficient Shipping' on August 4, 2017.
- Haridas Nandy Memorial Lecture and Seminar on 'Indian Non-ferrous Metal Foundries: Opportunities and Challenges' on August 5, 2017.

#### **LOCAL CENTRES**

#### **Ahmednagar**

- Celebrated 'World Environment Day' on June 5, 2017.
- Lecture on 'Watershed Management' delivered by Dr A A Atre, Associate Professor, Dr Annasaheb Shinde College of Agricultural Engineering, MPKV, Rahuri and Immediate Past Honorary Secretary of the Centre, on August 3, 2017.

#### **Angul**

 Lecture on 'Smart City - Challenges on Planning, Implementation and Sustenance' delivered by Mohammed Shamsher Ali, Director (Planning), FTTH, Restart Trading & Contracting Est, Riyadh, Saudi Arabia, on August 18, 2017.

#### **Aurangabac**

 Lecture on 'Energy Conservation – Way to Life' delivered by Mr G K Anand on August 28, 2017.

#### Belagavi

- Lecture on 'Flood and its Management' delivered by Dr. Chandramohan T, Scientist, National Institute of Hydrology, Belagavi on July 19, 2017.
- Workshop on 'Brick Work and Plastering' on July 31, 2017.

#### **Bhimavaram**

- Celebrated 'World Water Day' on March 22, 2017.
- Lecture on 'Recent Trends in Engineering Practices' delivered by Mr I B Venkat Rao, Technical Lead, C-Cube Technologies on May 11, 2017.
- Seminar on 'Advancements in Modern Telecommunication Networks' on May 17, 2017.
- Lecture on 'Methodologies to Reduce Environmental Hazards' delivered by Prof D Satyanarayana Raju, Mechanical Engineering Department, S R K R Engineering College, on June 5, 2017.

#### Chandrapur

 Organized Industry Institute Interaction Meet on 'Internship and its Realization' on June 28, 2017.

#### Durgapur

 Lecture on 'Towards Zero Road Accident' delivered by Mr Parasuram Shaw, Dy General Manager (HRD), SAIL, Durgapur Steel Plant, on August 20, 2017.

#### Gorakhpu

• Seminar on 'Advancement of Petroleum Technology' on August 23, 2017.

#### Hosu

• Workshop on 'Industrial Bio-Technology and its Applications' on August 11, 2017.

#### Indore

- Lecture on 'Cyber Security and its Relevance to Engineering Professionals and Engineering Students' delivered by Mr Varun Kapur, Additional Director General of Police (Narcotics) on August 16, 2017.
- Lecture on 'GST for Professional Engineers' delivered by Mr H K Nair, Commissioner GST and Central Excise, Indore Division, on August 21, 2017.

#### Kalahuran

- Lecture on 'Ceramic at a Glance' delivered by Dr Baburao N Sherikar, Professor, C & C Department, PDA College of Engineering, Kalaburagi, on August 7, 2017.
- Lecture on 'Techniques of Carbon Dioxide Capture and Artificial Photo Synthesis' delivered by Dr Amaresh R, Professor, Department of CCT, P D A College of Engineering, Kalaburagi on August 16, 2017.

#### Kozhikode

- Lecture on 'Altered Genes and Twisted Truth The Story of GM Crops in India' delivered by Prof K P Prabhakaran Nair, Former Professor, National Science Foundation, The Royal Society, Belgium on August 22, 2017.
- Organized Technical Visit to 'Kannur International Airport Ltd. (KIAL)' on August 29, 2017.

#### Neyveli

• Workshop on 'Tradition and Trends in Civil Engineering' on July 22, 2017.

#### Pune

 Workshop on 'Development of Mechatronics System using Arduino' during August 18-20, 2017.

#### Roorkee

 Lecture Meeting on 'Installation of Roadside Traffic Safety Mirrors in Roorkee' on August 16, 2017.

#### Rourkel

 Lecture on 'Safety Issues in Cryogenic Industry' delivered by Mr C R Mahapatra, Head of the Department, Oxygen Plant, Rourkela Steel Plant, Rourkela on August 23, 2017.

#### Salem

- Workshop on 'Role of Engineers in Green Building for Sustainable Construction' on June 7, 2017.
- Seminar on 'Recent Developments in Non-ferrous Alloys and their Applications' on July 22, 2017.
- Seminar on 'Recent Trends in Renewable Energy Sources and Energy Conservation' on July 29, 2017.
- Seminar on 'Machine Learning' on August 17, 2017.

#### Silcha

• Seminar on 'Sanitation and Hygiene' on August 22, 2017.

#### Solapui

 Workshop on 'Exploring Arduino Applications in the Field of Engineering' on June 28, 2017.

#### Tiruchirapalli

 Lecture on 'Power Generation from Non-Edible Seed Cakes' delivered by Mr M Vivek, Research Scholar, Periyar Maniammai University, Vallam, Thanjavur, on August 1, 2017.

#### Tirupati

- Organized 'SIGMOID 2K17' during April 8-9, 2017.
- Celebrated 'World Environment Day' on June 5, 2017.

#### Udaipu

Seminar on 'Improving Quality of Engineering Education' on August 18, 2017.

#### **OVERSEAS CHAPTERS**

#### **Qatar Chapter**

• Seminar on 'Role of Engineers in the Development of Nation' on August 18, 2017.

## Fuel Cells and Hybrid Vehicle Technology

Telangana State Centre of the Institution in association with Sphoorthy Engineering College, Hyderabad, organized a two-day All India Seminar on the topic 'Fuel Cells and Hybrid Vehicle Technology' under the aegis of Mechanical Engineering Division, IEI, during August 18-19, 2017 at Hyderabad. The Chief Guest, Mr Somarapu Satyanarayana, Chairman, Telangana State Road Transport Corporation and Hon'ble Member of Legislative Assembly, Telangana, in his address, emphasized that Hydrogen required for the fuel cell operation should be produced from water only as two-thirds of the earth is covered by water. He further suggested that the engineering students should be aware of the latest technologies in addition to the knowledge in their core branch of engineering. He highlighted the importance of the Harithaharam Programme started by Telangana Government to plant trees throughout the state. The Guest-of-Honour, Mr S Jagan Mohan Reddy, Secretary and Correspondent, Sphoorthy Engineering College, Hyderabad, in his speech, mentioned that in future, automobiles will be either electric or hybrid vehicles. He further stated that the automobiles with minimum number of parts will be manufactured in the future to reduce the weight and cost of the vehicle. The Keynote Speaker, Mr M Ramesh Pawar, Additional General Manager, BHEL Corporate R&D, Hyderabad, in his address, highlighted the importance of fuel cells and hybrid vehicles in future. He further informed that BHEL R&D has developed 1 kW and 2.5 kW fuel cells. Dr S Satyanarayana, Chairman of the Centre, presided over



the inaugural session. Earlier, Mr G Rameshwar Rao, Honorary Secretary of the Centre, welcomed the gathering and Dr G Venkata Subbaiah, Convener, Organising Committee, briefed about the Seminar. Mr T Anjaiah, Co-Convener of the Seminar, proposed the vote of thanks. A large number of papers on various sub-themes of the Seminar were presented and discussed during technical sessions. Dr D N Reddy, Director, Engineering Staff College of India, IEI, Hyderabad, was the Chief Guest at the Valedictory Function. In his address, Dr Reddy said that in future, we have to go for hybrid vehicles in place of internal combustion engine using fossil fuels. He further mentioned that though the cost of hybrid vehicles is high at present, it will be reduced by the development of the technology related to fuel cells and hybrid vehicles. 'In the hybrid vehicles, renewable sources of energy, such as, solar energy or wind energy may be used to reduce the initial cost of the hybrid vehicles', opined Dr Reddy.

# Engineering Staff College of India

Autonomous Organ of The Institution of Engineers (India)
Old Bombay Road, Gachi Bowli, Hyderabad 500 032



#### CPDPs for the Month of October 2017 **Scheduled Dates** Name of the Course Laboratory Management System Awareness & Internal Auditing (As per ISO / IEC 17025: 2005 & NABL Requirements) 03 - 06Current Requirements in Environmental Impact Assessment (EIA) Process and Procedures (as per MoEF Guidelines) 04 - 06NDT Level-II Certification in Penetrant Testing in accordance with ASNT Document No.: SNT-TC-1A 2006 04 - 06Failure of Power Transformers and Remedial Measures 05 - 09Flood Computation and Flood Disaster Management 09 - 13Cyber Security Best Practices -at Ooty 10 - 12Quality Assurance & Quality Control in Civil Engineering Construction Projects 10 - 13Communication and Presentation Skills (Communicating Assertively) 10 - 12Principles and Practices of Climate Mitigation and Adaptation 11 – 13 Best Practices in O&M and Failure Analysis of Synchronous Generators in Power Plants 12 - 16Climate Change - Management of Water Resources 23 - 25Road Accident Investigation 23 - 27Workshop on "NBA - SAR Filling preparedness for Assessment" 23 - 25Application of GIS, GPS & RS in Environmental Data Management 25 - 2726 - 28 Open Access, Power Trading and Tariffs - ABT Scenario

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*	Condition Monitoring Techniques of Motors, Generators, Pumps	
	and Turbines	27 – 29
*	GIS Applications	30 Oct - 1 Nov
	CPDPs for the Month of November 2017	
*	Relevance & Importance of Urban Forestry Climate Mitigation & Adaptation	01 – 03
*	Power Quality in T&D Systems - Issues and Solutions	01 – 03
*	Good Maintenance Practices for Durability of Structures	06 – 09
*	Network Security Administration	06 – 10
*	Certification Programme for Design for Six Sigma Green Belt	06 – 10
*	Best Practices in O&M and Failure Analysis of Synchronous Generators in	
	Power Plants	06 – 10
*	Control & Instrumentation including advances in Power Plant Applications	07 - 09
*	Digital Substations - Power System Protection, Control and Monitoring	13 – 17
*	Heat Exchanges Design and Performance Evolution in Thermal Plants &	
	Process Industry	13 – 15
*	Project Monitoring, Control and Implementation (Concept of Earned	
	Value Management System in Project Management)	14 – 17
*	Project Management in Construction Industry	14 – 17
*	Formulation of Research & Development Initiatives for Scientists and	
	Technologists	14 – 17
*	Static & Digital Energy Meters - Design, Function & Applications	15 – 17
*	ISO 9001 : 2015 QMS - Effective Implementation & Internal Auditor Training	g 15 – 17
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#### **ENGINEERING STAFF COLLEGE OF INDIA**

Stress Management (Leads to International Certification Accredited by

Imported Coal Blending and Coal Firing Optimization

International council of Stress management professional, Sydney, Australia)

Old Bombay Road, Gachi Bowli, Hyderabad 500 032; Ph: 23000465 / 23000466 (EPABX) Fax: 040-23000336; Email: ic@escihyd.org Website: www.escihyd.org

## Inauguration



Mr Navinchandra B Vasoya, President, IEI, inaugurated New Building of Haryana State Centre



Mr Navinchandra B Vasoya, President, IEI, inaugurated
New Building of Saurashtra Local Centre



Dr G Ranganath, Chairman, Tamilnadu State Centre inaugurated Office of Tiruvallur Local Centre

## Advanced Strategies for Corrosion Control in Marine Systems

Tuticorin Local Centre the Institution organized a two-day All India Seminar on the theme 'Advanced Strategies for Corrosion Control in Marine Systems' under the aegis of Marine Engineering Division, IEI, during August 10-11, 2017 at Tuticorin. Mr S T Mathew, Immediate Past Chairman of the Centre, presided over the inaugural session and welcomed all the dignitaries and participants. He mentioned that being located on the port city of Tuticorin, the theme of the Seminar was very much relevant. The Chief Guest, Mr I Maria Michael Raj, Senior Scientific Officer, Department of Atomic Energy, Heavy Water Board, inaugurated the Seminar. Mr Michael Raj in his Inaugural Address, mentioned that corrosion was a serious threat to productivity and sustained operation. He further stated that several advanced techniques have made it possible to identify corrosion at incipient stage itself. He discussed in detail about various methodologies, procedures and materials which can protect the marine systems against corrosion. Mr Michael Raj also appreciated the role of the Institution in this continuous knowledge sharing campaign. Capt. Bennet Paul Singh, Master



Mariner and Professor, PSN College of Engineering and Technology, in his Keynote Address, discussed with case studies on 'Successful Control over Corrosive Mechanisms in Marine Industry'. Mr G Selvaraj, Advisor, Coastal Energen Pvt. Ltd and Convenor, spoke about the heavy price being paid by all stakeholders due to corrosion in terms of money and degrading environment. Mr K Balasubramanian, Honorary Secretary of the Centre, proposed the vote of thanks. Papers on various sub-themes were presented and discussed during technical sessions.

## **IEI DIARY**

#### **Aerospace Engineering Division**

One Day Seminar on "The Study of Aerospace Engineering"

Udaipur, September 16, 2017

The Honorary Secretary, IEI, Udaipur Local Centre, 128, Hiran Magri, Sector 11, Near Seva Charitable Hospital, Udaipur 313002 [☎: (0294) 2583702; e-mail: udaipurlc@ieindia.org]

Thirty-first National Convention of Aerospace Engineers on "Innovation, Trends and Strategies of Indian Aerospace Sector – Present and Future"

Chennai, November 03-04, 2017

The Honorary Secretary, IEI, Tamilnadu State Centre, 19 Swami Sivananda Salai, Chepauk, Chennai 600005 [☎: (044) 25360614/64998729; Fax: (044) 25369433; e-mail: tnsc@ieindia.org]

#### All India Seminar on "Smart Materials and the Applications to Aerospace, Mechanical and Civil Structures"

Salem, December 12-13, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [☎: (0427) 2332544; e-mail: salemlc@ieindia.org]

Thirty-second National Convention of Aerospace Engineers on "Advances in Aerospace Sciences and Technologies"

Ranchi, October 27-28, 2018

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [28: (0651) 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### **Agricultural Engineering Division**

National Conference on "Food Process Engineering Technology"

Dharwad, October 06-07, 2017

The Honorary Secretary, IEI, Dharwad Local Centre, Balekundry Bhavan, Sir M Visvesvaraya Road, Dharwad 580 001 [☎: (0836) 274 2979; e-mail: dharwadlc@ieindia.org]

## All India Seminar on "Technological Interventions in Total Value Chain of Farming to Double Farm Income"

Chennai, October 13-14, 2017

The Honorary Secretary, IEI, Tamilnadu State Centre, 19 Swami Sivananda Salai, Chepauk, Chennai 600005 [☎: (044) 25360614/64998729; Fax: (044) 25369433; e-mail: tnsc@ieindia.org]

### One Day Seminar on "Power and Machinery Engineering Systems"

Dharwad, October 14, 2017

The Honorary Secretary, IEI, Dharwad Local Centre, Balekundry Bhavan, Sir M Visvesvaraya Road, Dharwad 580 001 [雪: (0836) 274 2979; e-mail: dharwadlc@ieindia.org]

Thirty-first National Convention of Agricultural Engineers on "Engineering Interventions in Doubling the Income of Small and Marginal Farmers by 2022"

New Delhi, February 2-3, 2018

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [☎: (011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

#### **Architectural Engineering Division**

International Conference on "Architectural Innovations: Technology and Materials"

Jaipur, October 6-8, 2017

The Honorary Secretary, IEI, Rajasthan State Centre, Gandhi Nagar, Tonk Road, Jaipur 302015 [28: (0141) 2706327/2700413; e-mail: rajasthansc@ieindia.org]

## All India Seminar on "Architectural Technologies for Building Engineers"

Kozhikode, October 14-15, 2017

The Honorary Secretary, IEI, Kozhikode Local Centre, 'AKASH', First Floor, Cherootty Nagar Housing Colony, K P Chandran Road, Puthiyara PO, Kozhikode 673004 [28: (0495) 2770614; e-mail: kozhikodelc@ieindia.org]

Thirty-third National Convention of Architectural Engineers on "Architectural Engineering Aspect for Building Envelopes"

Hyderabad, November 10-11, 2017

The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad, Telangana 500004 [28: (040) 23314969; e-mail: telanganasc@ieindia.org]

### All India Workshop on "Training Group Leaders in Tribal Housing Technologies"

Kozhikode, November 20-25, 2017

The Honorary Secretary, IEI, Kozhikode Local Centre, 'AKASH', First Floor, Cherootty Nagar Housing Colony, K P Chandran Road, Puthiyara PO, Kozhikode 673004 [28: (0495) 2770614; e-mail: kozhikodelc@ieindia.org]

### All India Workshop on "Advanced Computer Visualization Tools for Architectural Engineering"

Salem, January 19-20, 2018

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [282: (0427) 2332544; e-mail: salemlc@ieindia.org]

#### **Chemical Engineering Division**

One Day Seminar on "Self-assembly of Soft Materials and their Application in Energy"

Ananthapuram, September 01, 2017

The Honorary Secretary, IEI, Ananthapuram Local Centre, Old ECE Block, JNTUA College of Engineering, Saradha Nagar, Anantapuram, Andhra Pradesh 515002 [e-mail: anantapuramlc@ieindia.org]

#### Thirty-third National Convention of Chemical Engineers on "Nano-technology and its Application for Sustainable Development in Chemical Industries"

Pune, September 09-10, 2017

The Honorary Secretary, IEI, Pune Local Centre, Abhiyanta Bhavan, 1332, J M Road, Shivajinagar, Pune 411005, Maharashtra [2: 020-25533376 / 25520239 / 25530150; email: punelc@ieindia.org]

## International Conference on "Paradigm Shift in Chemical Engineering Education, Processes and Technology"

Ahmedabad, September 16-17, 2017

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [28: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.org]

#### One Day Seminar on "Effective and Remunerative Approach in Production of Ethanol from Seaweeds"

Salem, September 25, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd

Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

## All India Seminar on "Safety Management and Energy Conservation in Process Industries"

Hyderabad, October 06-07, 2017

The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad, Telangana 500004 [28: (040) 23314969; e-mail: telanganasc@ieindia.org]

#### **Civil Engineering Division**

All India Seminar on "Pavement Evaluation and Rehabilitation"

Bengaluru, September 07-08, 2017

The Honorary Secretary, IEI, Karnataka State Centre, 3 Dr B R Ambedkar Veedhi, Bengaluru 560001 [22: (080) 22264698/22207402; Fax: (080) 22256191; e-mail: karnatakasc@ieindia.org]

### All India Seminar on "New Trends and Innovations in Geotextile Reinforcement"

Thiruvananthapuram, September 19-20, 2017

The Honorary Secretary, IEI, Kerala State Centre, Visvesvaraya Bhavan, Opposite Kanakaunnu Palace, Thiruvananthapuram 695033 [28: (0471) 2322991, 2322993; TeleFax: (0471) 2322992; e-mail: keralasc@ieindia.org]

## One Day Workshop on 'Vulnerability Assessment of Important Structure at Imphal'

Imphal, September 23, 2017

The Honorary Secretary, IEI, Manipur State Centre, Government Polytechnic Building, 1st Floor, Takyelpat, Imphal, Manipur 795001 [e-mail: manipursc@ieindia.org]

### One Day Seminar on 'Smart City – A Path to Progress' Agra, September 30, 2017

The Honorary Secretary, IEI, Agra Local Centre, Raja Balwant Singh Engineering Technical Campus, City Office: Khandari Farm Campus, Bhagirathi Devi Marg, Agra 282002, [2: 0812-6892221; e-mail: agralc@ieindia.org]

#### One Day Seminar on 'Flood Control Management' Salem, October 06, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [22]: (0427) 2332544; e-mail: salemlc@ieindia.org]

## All India Workshop on "Extreme Loading on Structures" Roorkee, October 26-27, 2017

The Honorary Secretary, IEI, Roorkee Local Centre, IIT Campus, Roorkee 247667, Tel: (01332) 284 416, TeleFax: (01332) 272 589 [e-mail: roorkeelc@ieindia.org]

## All India Seminar on "Innovations and Challenges in Materials and Construction"

Kanpur, October 28-29, 2017

The Honorary Secretary, IEI, Kanpur Local Centre, Engineers Bhawan, HBTI East Campus, Nawabganj, Kanpur 208002 [TeleFax: (0512) 256 0034; e-mail: kanpurlc@ieindia.org]

#### Workshop on "National Building Code of India - 2016" Salem, November 02-03, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

All India Seminar on "Sustainable Materials and Technology for Better Future"



Rourkela, November 11-12, 2017

The Honorary Secretary, IEI, Rourkela Local Centre, National Institute of Technology Campus, Rourkela 769 008 [Fax: (0661) 247 2709; e-mail: rourkelalc@ieindia.org]

### All India Workshop on "Mass Hosting and Rapid Construction"

Roorkee, November 14-15, 2017

The Honorary Secretary, IEI, Roorkee Local Centre, IIT Campus, Roorkee 247667, Tel: (01332) 284 416, TeleFax: (01332) 272 589 [e-mail: roorkeelc@ieindia.org]

## One Day Seminar on 'Modern Surveying Techniques' Salem, December 16, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

## Workshop on 'Disaster Mitigation Measures Adopting National Building Code'

Salem, December 20, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

## One Day Seminar on 'Cost Effective and Eco-friendly Construction Technology'

Salem, January 10, 2018

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

## All India Seminar on "Concrete and Steel Structures – Care for their Health and Longevity"

Bokaro, August 25-26, 2018

The Honorary Secretary, IEI, Bokaro Steel City Local Centre, Abhiyanta Bhavan, Sector 5A, Bokaro Steel City 827006

[☎: (06542) 267227 / 288972; e-mail: bokarolc@ieindia.

#### Thirty-fourth National Convention of Civil Engineers, on "Innovative Trends in Civil Engineering for Sustainable Development"

Pune, September 28-29, 2018

The Honorary Secretary, IEI, Pune Local Centre, Abhiyanta Bhavan, 1332, J M Road, Shivajinagar, Pune 411005, Maharashtra [☎: 020-25533376 / 25520239 / 25530150; e-mail: punelc@ieindia.org]

#### **Computer Engineering Division**

One Day Workshop on "Bigdata and Its Application" Hosur, September 02, 2017

The Honorary Secretary, IEI, Hosur Local Centre, No.69, Kamaraj Nagar, Kumudepall, Near Adhiyamaan College of Engineering, Tamil Nadu, Hosur 635109[e-mail: hosurlc@ieindia.org]

### One Day Seminar on "Recent Trends in IoT for Smart Environment"

Salem, September 08, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]

#### One Day Workshop on "Computer Security"

Solapur, September 16, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhav, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [28: 0217-2727707; e-mail: solapurlc@ieindia.org]

National Conference on "Industry 4.0"

Salem, September 21-22, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [22]: (0427) 2332544; e-mail: salemlc@ieindia.org]

## One Day Seminar on "Cloud Computing and Data Analytics"

Solapur, September 27, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhav, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [28: 0217-2727707; e-mail: solapurlc@ieindia.org]

## One Day Workshop on "Foundation of Machine Learning Algorithm"

Solapur, November 19, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhay, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [28: 0217-2727707; e-mail: solapurlc@ieindia.org]

## All India Seminar on "Green Computing, Intelligent and Renewable Energy"

Kanchepuram, January 08-09, 2018

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

## All India Seminar on "Impact of Data Analysis on Business of Future through IoT & Social Media"

Ahmedabad, January 19-20, 2018

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.org]

## Thirty-second National Convention of Computer Engineers on "Application of IoT in Rural Development"

Ahmedabad, February 24-25, 2018

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.org]

#### **Electrical Engineering Division**

## One Day Seminar on "Promotion of Rooftop Solar Power in India"

Kolkata, September 12, 2017

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

### All India Seminar on "National Electric Mobility Mission 2020"

Delhi, November 17-18, 2017

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [2: (011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

#### Thirty-third National Convention of Electrical Engineers on "Hybrid AC/DC Power Systems for Effective Utilization of Renewable Energy"

Tiruchirapalli, November 24-25, 2017

The Honorary Secretary, IEI, Tiruchirapalli Local Centre, BHEL Main Office Road, Tiruchirapalli 620014 [☎: (0431) 255 4285; Fax: (0431) 252 0383 / 252 0775; e-mail: tiruchirapallilc@ieindia.org]

All India Seminar on "Energy, Power and Electrical Engineering"

Guwahati, November 24-25, 2017

The Honorary Secretary, IEI, Assam State Centre, Panbazar Overbridge, East Lane, Guwahati 781001 [☎: (0361) 2548742; Fax: (0361)2630368; e-mail: assamsc@ieindia.orgl

## One Day Seminar on "Integration and Challenges on Renewable Energy Systems"

Chennai, December 27, 2017

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

## One Day Workshop on "An Overview of Substation Control System Engineering"

Chennai, January 24, 2018

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

### All India Seminar on "Recent Trends in Renewable Energy Application and Research"

Ahmedabad, February 16-17, 2018

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.

#### "National Power Engineering Conference – 2018"

Madurai, March 09-10, 2018

The Honorary Secretary, IEI, Madurai Local Centre, T M Jambulingam Bhavan, 1 Vivekananda Nagar, 100 Feet Road, Surveyor Colony, K Pudur, Madurai 625 007 [28: (0452) 256 1783; e-mail: madurailc@ieindia.org]

## International Conference on "Recent Developments in Cleaner and Safer Nuclear Power Generation",

Hyderabad, May 24-26, 2018

The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad, Telangana 500004 [26: (040) 23314969; e-mail: telanganasc@ieindia.orgl

#### **Electronics & Telecom. Engineering Division**

## One Day Workshop on "Application of Digital Signal Processing"

Salem, September 06, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [☎: (0427) 2332544; e-mail: salemlc@ieindia.org]

## One Day Workshop on "Leading Edge Technology in LED Bulb Assembly and Manufacturing"

Solapur, September 11, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhav, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [28: 0217-2727707; e-mail: solapurlc@ieindia.org]

## All India Seminar on "Use of Nano-Technology in Medical Applications"

Bhubaneswar, September 16-17, 2017

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

#### All India Workshop on "Physical Computing using Arduino" Kanchepuram, October 5-6, 2017

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

One Day Workshop on "LabVIEW and its Applications" Visakhapatnam, October 07, 2017



The Honorary Secretary, IEI, Visakhapatnam Local Centre, 9-12-31/1, Beside A U Engineering Girls Hostel, Visakhapatnam 530003 [28: 0891-2747460; e-mail: visakhapatnamlc@ieindia.org]

#### One Day Seminar on "Wireless Sensor Networks in **Human Healthcare Monitoring System**"

Solapur, October 09, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhay, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [28: 0217-2727707; e-mail: solapurlc@ieindia.org]

#### One Day Seminar on "MIMO Techniques for Sensing Cardiopulmonary Activity"

Salem, November 15, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28]: (0427) 2332544; e-mail: salemlc@ieindia.org]

Thirty-third National Convention of Electronics and Telecommunication Engineers on "Recent Advances in

Hyderabad, November 29-30, 2017

The Honorary Secretary, IEI, Telangana State Centre, Visvesvaraya Bhavan, Khairatabad, Hyderabad, Telangana 500004 [2: (040) 23314969; e-mail: telanganasc@ ieindia.org]

#### One Day Seminar on "Nanotechnology in Medical Applications"

Salem, December 09, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [22: (0427) 2332544; e-mail: salemlc@ieindia.org]

#### One Day Seminar on "5-G Technologies & Future Scenario"

New Delhi, December 16, 2017

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [23: (011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

#### **Environmental Engineering Division**

#### One Day Workshop on "Theory and Practice of Wastewater Management"

Thanjavur, September 09, 2017

The Honorary Secretary, IEI, Thanjavur Local Centre, Periyar Maniammal University, Periyar Nagar, Vallam, Thanjavur 613403 [e-mail: thanjavurlc@ieindia.org]

#### One Day Workshop on 'Caring for All Life under the Sun' Ranchi, September 16, 2017

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [2: (0651) 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### One Day Seminar on "Hygiene and Public Health" Thanjavur, September 28, 2017

The Honorary Secretary, IEI, Thanjavur Local Centre, Periyar Maniammal University, Periyar Nagar, Vallam, Thanjavur 613403 [e-mail: thanjavurlc@ieindia.org]

#### One Day Seminar on 'Power with Zero Emissions and Zero Discharge: Demand for a Sustainable Future'

Kanpur, September 28, 2017

The Honorary Secretary, IEI, Kanpur Local Centre, Engineers Bhawan, HBTI East Campus, Nawabganj, Kanpur 208002 [TeleFax: (0512) 256 0034; e-mail: kanpurlc@ieindia.org]

One Day Seminar on 'Waste to Energy Technology'

Pilani, October 15, 2017

The Honorary Secretary, IEI, Pilani Local Centre, C Block, B K Birla Institute of Engineering and Technology Campus, CEERI Road, Pilani 333031

#### All India Seminar on 'Carbon Sequestration and Climate Change Mitigation'

Puducherry, October 26-27, 2017

The Honorary Secretary, IEI, Puducherry State Centre, 63 N S C Bose Salai, PWD Campus, Ground Floor, Circile-I Office, Puducherry 605 001 [28: (0413) 2331815; e-mail: puducherrysc@ieindia.org]

#### One day Workshop on "HVAC & R Industry"

Ranchi, November 25, 2017

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [28: (0651) 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### All India Seminar on "Water Conservation through 3R's -Reduce, Recycle and Reuse"

Bokaro, December 02-03, 2017

The Honorary Secretary, IEI, Bokaro Steel City Local Centre, Abhiyanta Bhayan, Sector 5A, Bokaro Steel City 827006 [ :: : (06542) 267227 / 288972; e-mail: bokarolc@ieindia.org]

#### All India Seminar on "Eco Friendly Clean & Green Energy – **Need and Challenges**"

Neyveli, December 08-09, 2017

The Honorary Secretary, IEI, Neyveli Local Centre, Institution Building, Block 17, Neyveli 607801 [26: (04142) 252 597; e-mail: neyvelilc@ieindia.org]

#### All India Seminar on 'Cyber Physical Systems for Water Security in Urban and Rural Areas'

Mangalore, December 27-28, 2017

The Honorary Secretary, IEI, Mangalore Local Centre, 2nd floor, Opal Complex, Opp Bejai Church, Bejai, Mangalore 575 004 [2: (0824) 2400112; email: mangalorelc@ieindia.org]

#### One Day Workshop on "Project Management Cost & Time Overrun"

Ranchi, January 14, 2018

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [28: (0651)] 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### All India Seminar on "Water Quality Management Strategies **Determination for Streams in a River Basin**"

Kolar, January 23-24, 2018

The Honorary Secretary, IEI, Kolar Local Centre, Dr T Thimmaiah Institute of Technology Premises, Oorgaum, Kolar Gold Fields 563120 [e-mail: kolarlc@ieindia.org]

#### One Day Workshop on "Environmental Management and Sustainable Development"

Thanjavur, January 24, 2018

The Honorary Secretary, IEI, Thanjavur Local Centre, Periyar Maniammal University, Periyar Nagar, Vallam, Thanjavur 613403 [e-mail: thanjavurlc@ieindia.org]

#### All India Seminar on "Energy Efficiency in HVAC & R" Ranchi, February 10-11, 2018

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [28: (0651)] 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### One Day Seminar on "Sewage Treatment and Disposal" Thanjavur, February 23, 2018

The Honorary Secretary, IEI, Thanjavur Local Centre, Periyar Maniammal University, Periyar Nagar, Vallam, Thanjavur 613403 [e-mail: thanjavurlc@ieindia.org]

Thirty-fourth National Convention of Environmental Engineers on "Environmental Pollution and Climate Change"

New Delhi, August 10-11, 2018

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org1

#### **Marine Engineering Division**

#### One Day Seminar on 'Complexity Involved in the Marine/ **Defence Engineering**'

Chennai, September 28, 2017

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

Thirty-first National Convention of Marine Engineers on "Inland Water Transport - Technical Challenges & Opportunities"

Kolkata, October 15-16, 2017

The Honorary Secretary, IEI, Durgapur Local Centre, Nehru Avenue, 'B' Zone, Durgapur 713205, [Fax: (0343) 256 4770; e-mail: durgapurlc@ieindia.org]

#### All India Seminar on 'Natural Gas in Inland and Coastal Shipping'

Bhubaneswar, November 18-19, 2017

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

#### Thirty-second National Convention of Marine Engineers on "Emerging Trends and Developments in Marine Technology"

Chennai, August 18-19, 2018

The Honorary Secretary, IEI, Tamilnadu State Centre. 19 Swami Sivananda Salai, Chepauk, Chennai 600005 [25360614/64998729; Fax: (044) 25369433; e-mail: tnsc@ieindia.org]

#### **Mechanical Engineering Division**

#### Thirty-third National Convention of Mechanical Engineers on "Advances in MEMS and Robotics in Manufacturing Industries"

Udaipur, September 01-02, 2017

The Honorary Secretary, IEI, Udaipur Local Centre, 128, Hiran Magri, Sector 11, Near Seva Charitable Hospital, Udaipur 313002 [28: (0294) 2583702; e-mail: udaipurlc@ieindia.org]

#### All India Seminar on "Automation in Welding"

Kolkata, September 08-09, 2017

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

#### One Day Seminar on "Technological Advancements and Safety & Sustainability Practices in Railways"

Palghat, September 23, 2017

The Honorary Secretary, IEI, Palghat Local Centre, XIII/1082 Nerukakkad, Kallepully P O Palakkad 678 005 [Tel: (0491) 2573137; e-mail: palghatlc@ieindia.org]

#### One Day Seminar on "Renewable Energy Technologies: **Issues and Perspectives**"

Silchar, September 24, 2017

The Honorary Secretary, IEI, Silchar Local Centre, Trunk Road, Silchar 788001 [28: (03842) 238945; e-mail: silcharlc@ieindia.org]

#### One Day Workshop on "CAD/CAM"

Salem, October 10, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [28: (0427) 2332544; e-mail: salemlc@ieindia.org]



## One Day Seminar on "Role of Automation in Integrating Renewable Energy"

Salem, October 11, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [☎: (0427) 2332544; e-mail: salemlc@ieindia.org]

### One Day Workshop on "Hands on Advanced Manufacturing Processes'

Solapur, October 15. 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhav, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [2: 0217-2727707; e-mail: solapurlc@ieindia.org]

## All India Seminar on "Energy Efficiency Intervention for Operational Cost Reduction in Manufacturing Industries" Delhi, November 03-04, 2017

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [☎: (011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

#### All India Seminar on "Sources of Planet Energy, Environmental & Disaster Science: Glacier Melting and it's Challenges"

Lucknow, November 18-19, 2017

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

## International Conference on "Future Material Handling Prospects – Opportunities and Challenges"

Ranchi, January 27-28, 2018

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [28: (0651) 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

## All India Seminar on "Recent Development in Mechanical Engineering — Computational Heat Transfer, Fluid Flow and Energy Systems"

Thiruvananthapuram, July 14-15, 2018

The Honorary Secretary, IEI, Kerala State Centre, Visvesvaraya Bhavan, Opposite Kanakaunnu Palace, Thiruvananthapuram 695033 [☎: (0471) 2322991, 2322993; TeleFax: (0471) 2322992; e-mail: keralasc@ieindia.org]

## Thirty-fourth National Convention of Mechanical Engineers on "Mechanical Engineering and Engineering Challenges for Manufacturing"

Delhi, September 01-02, 2018

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [2:011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

## Thirty-fifth National Convention of Mechanical Engineers, on "Exploring Trends and Developments in Automobile Engineering"

Hosur, September 13-14, 2019

The Honorary Secretary, IEI, Hosur Local Centre, No.69, Kamaraj Nagar, Kumudepall, Near Adhiyamaan College of Engineering, Tamil Nadu, Hosur 635109 [e-mail: hosurlc@ieindia.org]

#### **Metallurgical & Materials Engg. Division**

#### One Day Workshop on 'Nano-technology'

Salem, September 28, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [☎: (0427) 2332544; e-mail: salemlc@ieindia.org]

## All India Seminar on "Mechanics, Design and Testing of Composites"

Madurai, January 04-05, 2018

The Honorary Secretary, IEI, Madurai Local Centre, T M Jambulingam Bhavan, 1 Vivekananda Nagar, 100 Feet Road, Surveyor Colony, K Pudur, Madurai 625 007 [2: (0452) 256 1783; e-mail: madurailc@ieindia.org]

## Thirty-first National Convention of Metallurgical & Materials Engineers on "Role of Stakeholders in Development of Roadmap for Steel Vision"

Kolkata, January 19-20, 2018

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

## International Conference of Metallurgical & Materials Engineering Division on "Synthesis, Characterization and Application of Nanomaterials [SCAN]"

Kolkata, November 01-03, 2018

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

#### **Mining Engineering Division**

### One Day Seminar on 'Environmental Compliance Monitoring for Minor Mineral Mines'

Salem, September 23, 2017

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [☎: (0427) 2332544; e-mail: salemlc@ieindia.org]

## All India Seminar on "Advancement in Mine Closure and Rehabilitation Techniques"

Ranchi, December 16-17, 2017

The Honorary Secretary, IEI, Jharkhand State Centre, Engineer Bhawan, Nepal Kothi Campus, Ranchi 834002 [26: (0651) 2491344; web: ieijsc.org; e-mail: jharkhandsc@ieindia.org]

#### Twenty-ninth National Convention of Mining Engineers on 'Sustainable Open Cast Mining at Small Mines'

Salem, February 22-23, 2018

The Honorary Secretary, IEI, Salem Local Centre, 3rd Floor, SPC Bhawan, No.104/7, Manivannan Street, Opp to Salem New Bus Stand, Salem 636004, Tamilnadu [2: (0427) 2332544; e-mail: salemlc@ieindia.org]

#### **Production Engineering Division**

## One Day Seminar on "Recent Advances in Nondestructive Testing"

Solapur, September 03, 2017

The Honorary Secretary, IEI, Solapur Local Centre, Vastu Vaibhav, 3 North Kasaba, 4th Floor, Near Laxmi Bank, Shivaji Chowk, Solapur 413001 [2: 0217-2727707; e-mail: solapurlc@ieindia.org]

#### One Day Seminar on 'Total Productive Management' Pilani, October 16, 2017

The Honorary Secretary, IEI, Pilani Local Centre, C Block, B K Birla Institute of Engineering and Technology Campus, CEERI Road, Pilani 333031

## All India Workshop on "Quality Improvement in Products and Processes: Principles, Methods and Applications"

Kolkata, October 27-28, 2017

The Honorary Secretary, IEI, West Bengal State Centre, 8 Gokhale Road, Kolkata 700020 [28: (033)22238914; Fax: (033) 22233140; e-mail: wbsc@ieindia.org]

## All India Workshop on "Six Sigma Fundamentals and Applications"

Kolkata, March 16-17, 2018

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

#### **Textile Engineering Division**

## One Day Workshop on "Geo Textiles in Civil Engineering" Ahmedabad, October 07, 2017

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.org]

## Thirty-first National Convention of Textile Engineers on "Indian Textile Industries: Future Direction"

Hosur, February 17-18, 2018

The Honorary Secretary, IEI, Hosur Local Centre, No.69, Kamaraj Nagar, Kumudepall, Near Adhiyamaan College of Engineering, Tamilnadu, Hosur 635109 [e-mail: hosurlc@ieindia.org]

#### **Interdisciplinary Coordination Committee**

## One Day Workshop on 'Utilization of Industrial & Mining Wastes in Engineering Projects for Materials Sustainability'

Jamshedpur, October 07, 2017

The Honorary Secretary, IEI, Jamshedpur Local Centre, Pipe Line Road, Sakchi (Between Red Cross Society and TCE Building), Jamshedpur 831001 [☎: (0657) 2234316; Fax: (0657) 2230159; e-mail: jamshedpurlc@ieindia.org]

#### All India Seminar on "Real Estate Industry and Agricultural Potential of India"

Delhi, October 06-07, 2017

The Honorary Secretary, IEI, Delhi State Centre, Engineers Bhawan, Bahadur Shah Zafar Marg, New Delhi 110002 [☎: (011) 23379052/23379948; Fax: (011) 23370489; e-mail: delhisc@ieindia.org]

## All India Seminar on "Role of Engineers in the Development of Smart Cities in India"

Pune, October 7-8 & 14-15, 2017

The Honorary Secretary, IEI, Pune Local Centre, Abhiyanta Bhavan, 1332, J M Road, Shivajinagar, Pune 411005 [28: 020-25533376 / 25520239 / 25530150; e-mail: punelc@ieindia.org]

## All India Seminar on 'Advances in Engineering & Technology for Sustainable Development'

Pantnagar, November 25-26, 2017

The Honorary Secretary, IEI, Pantnagar Local Centre, 209A (Old Building), College of Technology, Pantnagar 263145 [☎: (05944) 235 582 / 233 457; Fax: (05944)235582 /233473; e-mail: pantnagarlc@ieindia.org]

## All India Seminar on "Engineering Projects: Contracts, Funding and Legal Aspects"

Jabalpur, December 09-10, 2017

The Honorary Secretary, IEI, Jabalpur Local Centre, Visvesvaraya Marg, Civil Lines, Jabalpur 482 001 [TeleFax: (0761) 267 8929; Fax: (0761) 404 5625; e-mail: jabalpurlc@ieindia.org]

## One Day Workshop on "Communication and Personality Development for Engineers"

Ahmedabad, February 10, 2018

The Honorary Secretary, IEI Gujarat State Centre, Bhaikaka Bhavan, Law College Road, Ahmedabad 380006 [☎: (079) 26400811; Fax: (079) 26561825; e-mail: gujaratsc@ieindia.org]

## International Conference on "Emerging Technologies for Sustainable and Intelligent Technologies for HVAC & R Systems"

Kolkata, July 20-21,2018

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



**32**nd

## INDIAN ENGINEERING CONGRESS

Chennai, December 21-23, 2017

#### Theme:

## **Innovation in Engineering: Competitive Strategy Perspective**

Organized by: The Institution of Engineers (India)

### Hosted by: Tamilnadu State Centre

Contact: Organising Secretary, 32<sup>nd</sup> Indian Engineering Congress, The Institution of Engineers (India), Tamilnadu State Centre 19 Swami Sivananda Salai, Chepauk, Chennai 600005, Tel: (044) 25360614/64998729, Fax: (044) 25369433 Email: tnsc@ieindia.org

## **Twenty-fifth IEI Convocation and Technicians'/Students' Convention**

Goa, October 28-29, 2017

Theme: Role of Engineers towards Skill India Mission

#### Sub-themes:

- · Skill India Mission: Opportunities and Challenges
- · Engineering Education for Mission, Skill India
- Technological Advancement to propel India in next three decades
- **Employment Opportunities with Skilled Manpower**
- · Training the Masses: Path Ahead
- · Equipping Engineering Colleges with Latest Curricula
- India going Global: Are we prepared?
- Role of Engineers in Technological Advancement, hands on Training and Meeting Employment Demand
- Industry Institute Interaction: Key to Skill India Mission
- · Role of Infrastructure in Mission, Skill India

With this in focus, papers are invited from Technician/Senior Technician members, students of polytechnics and engineering colleges for presentation in the All India Technicians'/Students' Convention to be held on 28 Oct 2017 at Goa. The papers shall be on innovative ideas, design, prototype and technology development, case studies, survey details augmenting innovations, etc. pertaining to the theme so as to reach at Goa State Centre latest by 25 Sep 2017.

#### Organized by: The Institution of Engineers (India) Hosted by: Goa State Centre

For further information, please contact:

The Organising Secretary (Convocation 2017), The Institution of Engineers (India) Goa State Centre, D type quarters, D-8-1, Government Polytechnic Campus Altinho, Panaji Goa 403 001, Phone: 0832-2434686 E-mail: goasc@ieindia.org / goastatecentre@gmail.com



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