

REPORT OF NATIONAL CONVENTION ORGANISED BY CENTRES

Name of Centre		Delhi State Centre	
Title of Activity:	34 th National Convention of Mechanical Engineers and National Seminar on 'Mechanical Engineering and Emerging Challenges for Manufacturing'		
Activity under Divisional Board		MCDB	
Date:	07-08 Sept 2018	Venue:	Delhi State Centre, IEI



President, IEI during the Inaugural Session



Lighting of the lamp

Report of National Convention

Delhi State Centre of the Institution of Engineers (India) organised the thirty-fourth National Convention of Mechanical Engineers and National Seminar on the theme 'Mechanical Engineering and Emerging Challenges for Manufacturing' during September 07-08, 2018 at Delhi. The Chief Guest, Mr Sisir Kumar Banerjee, President, IEI during his inaugural address mentioned that the demand for high calibre engineering profession would be a major requirement to meet the explosion of infrastructure development underway in India and in the developing world at large. He further mentioned that manufacturing in India is highly reliant on well functioning infrastructure and India's manufacturing exporters play the key role in promoting the sector's prowess to consumers across the world. President, IEI focussed on the major challenges of manufacturing including lack of skilled manpower, proper attention in research and innovation, lack of infrastructural development, cyber security, customer satisfaction etc.

Dr Arun Kumar Shrivastava, Chairman, Mechanical Engineering Division Board, IEI presided over the Inaugural Session. He stressed on critical challenges in manufacturing in view of rapid technological development, globalization, capacity building, exponential growth in manufacturing, environmental and safety impacts in different facets in manufacturing and so on. Mr Pradeep Chaturvedi, Council Member, IEI and Chairman, Technical Committee was present on the dais and addressed the gathering. He focussed on training and development of skilled manpower, new job generation and subsequent obsolescence due to growing automation and digitization. Earlier, Mr Devendra Gill, Chairman, Delhi State Centre welcomed the august gathering. Mr Praveen Singh, Honorary Secretary, Delhi State Centre proposed the vote of thanks. A Technical Proceedings containing all papers was released during the occasion.

The Dr S C Bhattacharyya Memorial Lecture was delivered by Mr Keshav Chandra, Former Member (Mechanical), Railway Board & Ex-officio Secretary to the Government of India on the theme 'Challenges in Manufacturing'. Mr Chandra, during his presentation, explained different challenges being faced by the mechanical engineers and mentioned the principal reasons behind those challenges and how to overcome it.

The Dr S P Luthra Memorial Lecture was presented by Prof (Dr) P B Sharma, Vice Chancellor, Amity University, Gurugram on the theme 'New Vistas of Mechanical engineering for Industry 4.0'. Prof Sharma mentioned mechanical engineering as the backbone of modern scientific technology driven growth and development and always remained on the forefront of engineering and technology revolution. He mentioned the advents of fourth industrial revolution, which include smart materials, nano structured composites, biodegradable plastics and polymers, bio-inspired manufacturing, Global SCM powered by IoT, Info-Nano-Bio Revolution ushering the new industrial revolution and so on. The printed copies of Memorial Lecture booklets were distributed among the audiences during the sessions.

Two State of the Art Lecture were presented during the occasion by Mr R S Sharma, Managing Director, Lalitpur Power Generation Company

Limited & former CMD, NTPC on the theme 'Process and Technological Interventions for Controlling Cost of Generation' and Lt General K K Agarwal, SM, VSM, Director General of EME on the theme 'Make in India and State of Art Challenges for the Indian Army' respectively. On this occasion, four Eminent Engineering Personalities, namely; Mr R S Sharma, Managing Director, Lalitpur Power Generation Company Ltd & Former CMD, NTPC; Mr Keshav Chandra, Former Member (Mechanical), Railway Board & Ex-Officio Secretary to the Govt of India and Prof P B Sharma, Vice Chancellor, Amity University, Gurugram were felicitated for their valuable contributions in the field of Mechanical Engineering by the Chief Guest during the Award Function, Mr Ashwani Lohani, Chairman, Railway Board, Government of India.

The 'IEI Young Engineers Award' under Mechanical Engineering Division for the year 2018-19 was presented to Dr Aezhisai Vallavi M S, Assistant Professor, Department of Mechanical Engineering, Government College of Technology, Coimbatore Tamilnadu; Dr S Siddharth, Dean (Academics), Department of Mechanical Engineering, Mother Teresa College of Engineering and Technology, Tamil Nadu and Dr R Keshavamurthy, Professor, Department of Mechanical Engineering, Dayananda Sagar College of Engineering, Bangalore.

A Panel Discussion on 'Future of Mechanical engineering' was organised during the occasion, chaired by Mr Sudhir Garg, Joint Secretary, Ministry of Micro, Small and Medium enterprise, Government of India.

A large number of papers embracing the theme of the National Seminar were presented and discussed during technical sessions.

The Mechanical Engineering Convention were recognised under "Make in India Project" of MSME.

EMINENT ENGINEER AWARDEES

On this occasion the Eminent Engineers Awards and Young Engineers Awards were also presented.

- **Mr. U P Singh**, IAS, Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation, Govt of India
- **Mr. R S Sharma**, Managing Director, Lalitpur Power Generation Company Ltd.& Former CMD, NTPC
- **Mr. Keshav Chandra**, Former Railway Board Member & Ex-Officio Secretary to the Gol
- **Prof. P B Sharma**, Vice-Chancellor, Amity University, Manesar

YOUNG ENGINEER AWARDEES

- **Dr R Keshavamurthy**, Professor, Department of Mechanical Engineering, Dayananda Sagar College of Engineering
- **Dr Aezhisai Vallavi M S**, Assistant Professor, Department of Mechanical Engineering, Government College of Technology.
- **Dr S Siddharth**, Dean (Academics), Department of Mechanical Engineering, Mother Teresa College of Engineering and Technology

The session ended with a vote of thanks presented by Shri Praveen Kr. Singh, Honorary Secretary, The Institution of Engineers (India)-Delhi State Centre.

DETAILS OF THE SESSIONS

Day-1 (September 7, 2018)

DR S C BHATTACHARYYA MEMORIAL LECTURE

Lecture by: Shri Keshav Chandra, Former Member (Mechanical), Railway Board, Gol

DR S P LUTHRA MEMORIAL LECTURE

Lecture by: Prof. P B Sharma, Vice-Chancellor, Amity University

DISCUSSION ON "FUTURE OF MECHANICAL ENGINEERING" & STATE-OF-THE ART LECTURES

LECTURE-I

- **SPEAKER:** Shri R S Sharma, Managing Director, Lalitpur Power Generation Company Ltd.& Former CMD, NTPC
Topic: Process and Technology Intervention in Controlling Cost of Generation

LECTURE-II

- Lt Gen K K Aggrawal, SM, VSM, Director General, EME, Indian Army
Topic:- Proactive Indigenization Approach for Indian Army

TECHNICAL SESSION-I ON THEME “EFFICIENCY ACROSS THE ENERGY VALUE CHAIN IN ELECTRICITY SECTOR”

SPECIAL ADDRESSES BY

- Shri B P Singh, Member, Delhi Electricity Regulatory Commission
Topic “Coal Production and Conversion”
- Shri Ghanshyam Prasad, Chief Engineer, Ministry of Power, Government of India
Topic “Policy Measures for Efficiency Improvement in Electricity Sector”
- Shri Puneet Kalhan, BU head for PS CD, Siemens Ltd
Topic “Technical Advances for Efficiency Improvement in Electricity Sector”
- Shri Rajneesh Rana, General Manager, Energy Efficiency Services Limited
Topic “Energy Efficiency Programme”

TECHNICAL SESSION-II ON THEME “MAKE IN INDIA - ROLE OF MSME: MARKETING, FUNDING AND TECHNOLOGY CHALLENGES

SPEAKERS

- Prof Ranganath M Singari, Professor & Head, Department of Design, DTU
Topic “Production Engineering and MSME Competiveness”
- Dr. O P Mehta, Director, Ministry of Micro, Small & Medium Enterprises
Topic “Zero Defect Zero Effect (ZED) towards Quality, Reliability and Sustainability”
- Shri Narender Kumar, Scientist ‘C’, Defence Research Development Organization
Topic “Challenges in the field of Reliability”
- Shri Atar Singh, Formerly Director, National Power Training Institute
Topic “Grading System in ZED”
- Prof K Ashok Reddy, St. Peter’s Engineering College
Topic” Design & Analysis of Vertical Axis Wind Savonius Micro Turbine”

TECHNICAL SESSION-III ON THEME “CHALLENGES OF RENEWABLE ENERGY OPERATIONS & INTEGRATION WITH GRID”

SPEAKERS

- Dr. B Bandyopadhyay, Former Director, Solar Energy Centre
Topic “Renewable Energy Programme – Issues in Development”
- Shri V K Mann, Addl. General Manager, Delhi Metro Rail Corporation
Topic “Solar Prospective”
- Shri Rajneesh Rana, General Manager, Energy Efficiency Services Limited
- Shri S S Maan, Executive Engineer, Central Public Works Department
Topic “Importance of solar Power Self dependency at the time grid failure”
- Shri R K Yadav, Additional General Manager (Commercial & Efficiency)
Pragati Power Corporation Limited
Topic “Solar Root P V Plant: Issues of Installation Operation Maintenance & Grid Connectivity
- Shri Sanjay Srivastava, Head Power Mgmt Group, BSES Rajdhani Power Limited

Topic "Challenges of Renewal Energy Operations BRPL's Prospective"

TECHNICAL SESSION-IV ON THEME "MAKE IN INDIA CHALLENGES AND PROSPECTS"

SPEAKERS

- Dr. Ashish Agarwal, Associate Professor, SOET, IGNOU
Topic "Importance of Reliability of Supply Chain Under make India Initiative"
- Shri Yogesh Gupta, Industry Fellow, Uttarakhand Petroleum University Dehradun
Topic "Challenges in quality production under make in India Initiative "
- Dr. Kanchan Mudgil , Assistant Professor, Department of Mechanical Engineering, MAIT, Delhi
Topic "Importance of waste Minimization and management under make in India Initiative"

PRESENTATION BY RESEARCH SCHOLARS

- Dr Soumya Kanti Raj , Asst Prof, Heritage Institute of Technology, Kolkata
Topic "Some Aspects on Industrial Insulator Processing and its Properties"
- Ms. Ragini Singh, PG Scholar, Harcourt Butler University, Kanpur
Topic "Thermo economic Analysis of Solid Oxide Fuel Cell-Gas Turbine-Organic Rankine Cycle"
- Shri Bhisim Dewangan, Ph.D Scholar, Indian Institute of Information Technology, Design and Manufacturing Jabalpur
Topic "Recent Development and Current Challenges pertaining to Sisal Fiber Composites"

TECHNICAL SESSION-V ON THEME "ENGINEERING EDUCATION, SKILLS AND DEVELOPMENT"

KEY-NOTE SPEAKERS

- Prof Vipin, Head, Department of Mechanical Engineering, Delhi Technological University
Topic "Mechanical Engineering: Challenges in Enhancing Skill"

SPEAKERS

- Prof (Dr) Arvind Gupta, Dean (Management) YMCA University, Faridabad
Topic "Challenges in Mechanical Engineering Education in Modern Time "
- Prof (Dr) A K Singh, Professor, Dept of Mechanical Engineering, Amity University Noida
Topic "Pros and Cons of Information Technology in Engineering Education"

PRESENTATION OF RESEARCH PAPERS

- Mr Rajib Ranjan Pal, Asst Prof Heritage Institute of Tech.
Topic "Some Aspects on Electroless Coating in relation to Modern Engineering Applications"
- Mr Srinath Ghosh, Department of Metallurgical & Materials Engineering, Jadavpur University
Topic "Development of Spinel phase Refractory material using Glycine as fuel by Solution Combustion process"
- Mr Rahul Kumar Jain, Delhi Technological University
Topic "Tribological Study of Cold Rolling Process: A Review"
- Mr Sumit Joshi, Research Scholar, Delhi Technological University
Topic "Effect of Friction Stir Processing (FSP) on the wear behaviour of as cast magnesium alloy"
- Mr. Sumit Chaudhary, Research Scholar, Delhi Technological University

Topic "Tribological and thermal analysis of tribopair under dry, starved and fully flooded lubricating conditions"

- Mr Anurag Sharma, Research Scholar, Delhi Technological University
Topic "Investigations of Tribological Behaviour in Machining Operation for a Single Point Cutting Tool in Presence of Coolant"
 - Mr. Pushpendra Yadav, Research Scholar, Dayalbagh Educational Institute
Topic "Effect of build orientation and infill density on mechanical properties of 3D printed parts by Fused Deposition Modeling"
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RECOMMENDATIONS

- Manufacturing sector will be the key factor in the transformation towards a New India which will fulfil the aspirations of millions in rural and urban areas. India's goal of attaining 7% (+) economic growth rate can only be achieved through manufacturing sector output. Advances in mechanical engineering will be crucial for the same.
- Rapid technology development and globalization in manufacturing sector is posing serious challenges to mechanical engineers. To meet these challenges it is necessary to promote skills development and modify our training programmes to international standards.
- Engineering education is undergoing revolutionary change to counter the impact of technologies like automation, robotics, artificial intelligence and digitisation. The government needs to look into the emerging needs and develop engineering curricula to respond to emerging needs and produce better equipped engineers.
- The Institution of Engineers (India) should develop linkages with government agencies and play its rightful role in supporting Make in India Initiative; Zero Defect Zero Effect Initiative and other Skills Development Initiative.
- The private sector can play a crucial role in promoting manufacturing. IEI should serve as a platform for promoting industry-academia-professional society interaction.
- IEI should coordinate with other professional engineering bodies to promote better acceptability of engineers for employment.