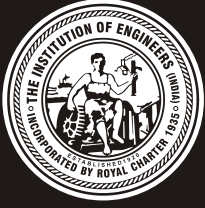


IEI



EPITOME

A Century of Service to the Nation

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Er Narendra Singh

Editor:

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Secretary & Director General

Associate Editor:

Dr N Sengupta, Director (Technical)

Special Contribution:

Mr S Chakraverty, Mr Kingshuk Sen,
Mr T Chakraborty, Ms A Dutta,
Mr P Chakraborty, Mr S Bagchi

Design & Outlay:

Ms H Roy, Publication Assistant

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

Telephone:

91-33-40106259

E-mail:

newsletter@ieindia.org

Website:

http://www.ieindia.org

Members in the NEWS



Cdr Dr Bhaskar Murlidhar Bhandarkar, FIE
 Director General
 Institution for Innovation, Industrial Engineering and Entrepreneurship &
 Former National Chairman
 Indian Institution of Industrial Engineering, Mumbai, Maharashtra
cdrbhandarkar@gmail.com

DISTINGUISHED EDUCATOR AWARD by **IEOM Society, USA** on 18 August 2021



Er Sanjeev C Gour, FIE
 Scientist SG
 Master Control Facility, Indian Space Research Organisation (ISRO), Hassan,
 Karnataka
scgour@yahoo.com

Achieved the **ISRO Awards 2018**, for the excellent contribution made towards the activities of the Organisation on dated **March 2021**.



Dr Indrasen Singh, FIE
 Senior Professor and Dean
 National Institute of Construction Management and Research, Goa
indrasensingh022@gmail.com

Dr Indrasen Singh was conferred the **National Education Excellence Award** by **International Institute of Education and Management** for his outstanding achievements and remarkable role in the field of Education at New Delhi on 5th May 2021



Dr G Baskar, FIE
 Professor
 Department of Biotechnology, St. Joseph's College of Engineering,
 Chennai
basg2002@gmail.com

Received **ISTE-PERİYAR BEST ENGINEERING COLLEGE TEACHER AWARD – 2020** from Indian Society for Technical Education - Tamil Nadu Section



Members in the NEWS



Prof Hemraj Ramdas Kumavat, MIE

Assistant Professor

Civil Engineering Department, R C Patel Institute of Technology, Shirpur, Maharashtra
kumavathr1981@gmail.com

Application Status: Design Accepted and Published
Design Application No.: 332140-001
Application of Design: Concrete Scanning Equipment
Journal No: 35/2021
Journal Date: 27/08/2021
Details of Patent: Mechanism for scanning concrete members of structures in order to evaluate their stability and quality in terms of honeycombing, reinforcement location, moisture condition, and void cracks existing in concrete through sensing device.

Application Status: Design Accepted and Published
Design Application No.: 331821-001
Application of Design: Concrete Mobility Machine
Journal No: 30/2021
Journal Date: 23/07/2021
Details of Patent: Mechanism for mixing concrete ingredients according to grade and moisture condition for strength and durability purpose. Whole mechanism is operating through remotely sensors and program for evaluating material properties and mix analysis.

Application Status: Design Accepted and Published
Design Application No.: 332158-001
Application of Design: Soil Strength Assessor Equipment
Journal No: 31/2021
Journal Date: 30/07/2021
Details of Patent: Mechanism for estimating strength properties of soil on site by gear wheel and dial gauge. Temperature, moisture and deflection/consolidation properties are analyzed by remotely sensors through before and after loading.

Registered and published at Boudhik Sampada Bhavan, Trade Marks & Patent Office, Kolkata.



Dr Hemant Ichchhashankar Joshi, MIE

Lecturer

Department of Electrical Engineering, Directorate of Technical Education, Government of Gujarat
hemantjoshi0711@gmail.com

Application Number: 201721020308
Date of Filing: 09/06/2017
Title of Invention: Smart Domestic Power Scheduling System
Field of Invention: Electrical
Publication Number: 11/2018
Publication Date (U/S 11A): 16/03/2018
Date of Certificate Issue: 26/03/2021
Post Grant Journal Date: 02/04/2021

Abstract: POWER SCHEDULING SYSTEM — A Smart Domestic Power Scheduling System comprising Real Time Price based power scheduling system that is implemented effectively in Smart Power Grid to match supply and demand where in Home Energy Controller (HEC) & smart plug are used to shift the operation of schedulable load from peak period to off peak period and to shift said load, day-ahead electricity price is required in advance, for which suitable estimation is required thereby enabling the customers to decide the next day load pattern in turn enabling reduction in the peak demand on the grid. Patent Grant from Intellectual Property India, Patents/Designs/Trade Marks/Geographical Indications, Boudhik Sampada Bhavan, Antop Hill, S.M. Road, Mumbai.

Publication by Members



Er Amitabha Ghoshal, FIE

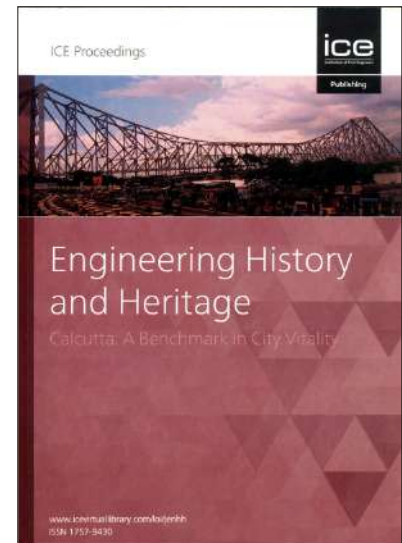
President

*Consulting Engineers Association of India, Kolkata
gamitabha@yahoo.com*

Er Amitabha Ghoshal has authored the ‘**Editorial**’ for the Proceedings of the Institution of Civil Engineers published on “**Engineering History and Heritage # Calcutta: A Benchmark in City Vitality**”. Volume 173, Issue 3, pp 1–3, ICE Publishing, ISSN 1757-9430, DOI: <https://doi.org/10.1680/jenhh.2020.173.3.77>

He has contributed an article titled “**Howrah Bridge: icon of a 330-year-old city in India - part I: history, planning and design**”. Volume 173, Issue 3, pp 41–52, ICE Publishing, ISSN 1757-9430, DOI: <https://doi.org/10.1680/jenhh.19.00017>

He has also contributed another article titled “**Howrah Bridge: icon of a 330-year-old city in India - part II: history, planning and design**”. Volume 173, Issue 4, pp 85–95, ICE Publishing, ISSN 1757-9430, DOI: <https://doi.org/10.1680/jenhh.19.00019>



Er V Pratap Koppuravuri, AMIE

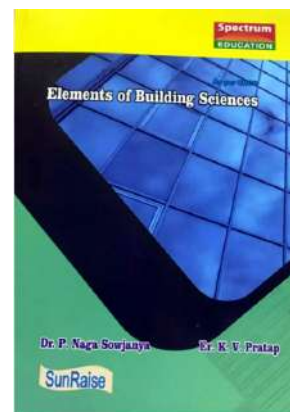
Assistant Professor

*Department of Civil Engineering, Narasaraopeta Engineering College (Autonomous), Narasaraopeta, Affiliated to Jawaharlal Nehru Technological University, Kakinada, Guntur district, Andhra Pradesh
pratap_daddy_pratap@yahoo.co.in*

Elements of Building Sciences

Building science involves selecting suitable materials and carrying out building construction neatly and hassle free. This book comprehensively covers all aspects of the subject and is written as per the requirements of civil engineering students. Aimed at civil engineering students and graduate engineers, professionals, practicing engineers this book offers a detailed description of various building materials which are being used in construction. All the latest building materials are also mentioned. The text is presented in simple, precise and reader-friendly language. It is amply supported by figures and tables. Detailed coverage of all universities syllabus. Simple and precise explanations. Text sufficiently illustrated by figures and tables. Objective questions are mentioned

Co-author P Naga Sowjanya
ISBN 978-81-952678-2-8
Date of Publication September 2021
First Edition 2021
Number of Pages 360
Price Rs 399/-
Publisher SunRaise International Publishers, Hyderabad



Publication by Members



Prof Lala Behari Sukla, FIE

Director

Biofuels and Bioprocessing Research Centre, Institute of Technical Education and Research, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar
suklab@yahoo.co.in, suklaib@outlook.com

Title of Book Chapter: Microbial Leaching for Recovery of Nickel and Cobalt from Lateritic Ore: A Review

Chapter under *Hydrometallurgy, Ni-Co 2021: The 5th International Symposium on Nickel and Cobalt, Part of the The Minerals, Metals & Materials Series book series (MMMS), Springer, Cham, Anderson C, et al (eds), Published (Online): 18 February 2021, pp. 207-217, ISBN(Online): 978-3-030-65647-8, ISBN (Print): 978-3-030-65646-1*

DOI: https://doi.org/10.1007/978-3-030-65647-8_17

Co-authors: Archana Pattanaik, D P Krishna Samal & Debabrata Pradhan



Prof Hemraj Ramdas Kumavat, MIE

Assistant Professor

Civil Engineering Department, R C Patel Institute of Technology, Shirpur, Maharashtra
kumavathr1981@gmail.com

Title of Book Chapter: Proposed Framework for Sustainable Village Strategy in the Semi-Arid Region of Maharashtra, India

Chapter under *Latest Trends in Renewable Energy Technologies, Part of the Lecture Notes in Electrical Engineering book series (LNEE), Proceedings of NCRESE 2020, Shelly Vadhera, Bhimrao S Umre, Akhtar Kalam (eds), Volume 760, Springer, Singapore, Published (Online): 02 July 2021, pp. 161-171, ISBN (Online) 978-981-16-1186-5, ISBN (Print) 978-981-16-1185-8*

DOI: https://doi.org/10.1007/978-981-16-1186-5_13

Co-authors: Rohan V Kumavat & Hemal V Bhargale

Title of Book Chapter: Experimental Investigation of Physiochemical Properties of Cement Mortar Incorporating Clay Brick Waste Powder: Recyclable Sustainable Material

Chapter under *Handbook of Solid Waste Management, Baskar C, Ramakrishna S, Baskar S, Sharma R, Chinnappan A, Sehrawat R (eds), Springer, Singapore, Published (Online): 13 August 2021, ISBN (Online) 978-981-15-7525-9*

DOI: https://doi.org/10.1007/978-981-15-7525-9_65-1

Co-author: Rohan V Kumavat

Title of Paper: Experimental Investigations on Effect of Compaction, Curing, Water to Cement Ratio, Cement Type and Temperature Variation on the Rebound Hardness of Concrete

Structural Engineering, KSCE Journal of Civil Engineering, Volume 25, Issue 05, May 2021, pp. 1857-1864, ISSN 1226-7988

DOI: <https://doi.org/10.1007/s12205-021-1508-5>

Co-author: Narayan R Chandak

Title of Paper: Factors Influencing the Performance of Rebound Hammer used for Non-destructive Testing of Concrete Members: A Review

Case Studies in Construction Materials, Volume 14, June 2021, ISSN 2214-5095

DOI: <https://doi.org/10.1016/j.cscm.2021.e00491>

Co-authors: Narayan R Chandak & Ishwar T Patil

Title of Paper: Repeatability of Concrete Rebound Hardness using Comprehensive Statistical Analysis

Journal of King Saud University - Engineering Sciences, Published (Online): 03 March 2021, ISSN 1018-3639

DOI: <https://doi.org/10.1016/j.jksues.2021.02.013>

Co-author: Narayan R Chandak

Publication by Members



Er Shankar H Sanni, MIE

Associate Professor
Basaveshwar Engineering College (BEC), Bagalkot
shsanni@gmail.com

Title of Book Chapter: Seismic Analysis of Multi-storey Building on Sloping Ground with Ground, Middle and top Soft Storey

Chapter under Sustainability Trends and Challenges in Civil Engineering, Select Proceedings of CTCS 2020, Part of the Lecture Notes in Civil Engineering book series (LNCE), Volume 162, Springer, Singapore, Nandagiri L, Narasimhan M C, Marathe S, Dinesh S (eds), Published (Online): 03 September 2021, pp. 149-165, ISBN (Print): 978-981-16-2825-2, ISBN (Online): 978-981-16-2826-9

DOI: https://doi.org/10.1007/978-981-16-2826-9_11

Co-author: Ratnakala Bidreddy

Dr G Baskar, FIE

Professor
Department of Biotechnology, St. Joseph's College of Engineering, Chennai
basg2002@gmail.com

Title of Paper: Advancements in Heavy Metals Removal from Effluents Employing Nano-Adsorbents: Way towards Cleaner Production

Environmental Research, Elsevier, Volume 203, January 2022, Article No. 111815

DOI: <https://doi.org/10.1016/j.envres.2021.111815>

Co-authors: Janani R, Sivakumar K, Sunita Varjani, Huu Hao Ngo & Edgard Gnansounou

Title of Paper: Machine Learning Modeling to Identify Affinity Improved Biobetter Anticancer Drug Trastuzumab and the insight of Molecular Recognition of Trastuzumab towards its Antigen HER2

Journal of Biomolecular Structure and Dynamics, Taylor and Franchis, Published (Online): 14 August 2021

DOI: <https://doi.org/10.1080/07391102.2021.1961866>

Co-authors: Nataraj Balakrishnan, Sathyanarayan Balaji, Malathi Kullappan & Surapaneni Krishna Mohan



Dr Raj Kumar Goswami, FIE

Principal
Gayatri Vidya Parishad College of Engineering for Women, Visakhapatnam, Andhra Pradesh
rajkumargoswami@gmail.com

Title of Paper: Design of 32 States, Rate 4/5, 32 QAM, TCM Code for Fading Channel

IOSR Journal of Electronics and Communication Engineering (IOSR-JECE), Volume 16, Issue 5, Series 1 (September-October 2021), pp. 01-08, ISSN (Print): 2278-8735, ISSN (Online): 2278-2834

DOI: 10.9790/2834-1605010108

Dr Manish Prateek, FIE

Vice Chancellor
Dev Bhoomi Uttrakhand University, Dehradun, Uttarakhand
manishprateek@gmail.com

Title of Paper: Semantic Segmentation of PolSAR Image Data using Advanced Deep Learning Model

Scientific Reports, Volume 11, Article Number 15365, Published (Online): 28 July 2021, Open Access

DOI: <https://doi.org/10.1038/s41598-021-94422-y>

Co-authors: Rajat Garg, Anil Kumar, Nikunj Bansal & Shashi Kumar



Publication by Members



Er Amit Kumar Singh, FIE

Mentor

*Spidify Industries Pvt Ltd
amit4766@yahoo.co.in*

Title of Paper: Artificial Intelligence Applied on the Basis of Powering of Vessel and its Operational and Management Aspects

International Journal of Scientific & Engineering Research –IJSER, Volume 12, Issue 8, August 2021, pp. 1053-1058, ISSN 2229-5518

DOI: <https://doi.org/10.14299/ijser.2021.08.03>

Co-authors: Sarthak Saxena, Ritika Chowdhary, Rishant Pal, Monu Kumar, Durgesh Kumar & Sambhavi Raj

Dr Hemant Ichchhashankar Joshi, MIE

Lecturer

*Department of Electrical Engineering, Directorate of Technical Education, Government of Gujarat
hemantjoshi0711@gmail.com*

Title of Paper: Smart Irrigation System for Optimized use of Water and Energy

International Journal of Applied Engineering Research, Volume 16, Number 2, 2021, pp. 161-165, ISSN 0973-4562

DOI: <https://dx.doi.org/10.37622/IJAER/16.2.2021.161-165>

Co-authors: P P Raval & Kush Patel



Dr S S Krishna Chaitanya Bulusu, MIE

Assistant Professor

*Ecole Centrale School of Engineering, Mahindra University, Hyderabad
bulusuchaitanya@yahoo.co.in*

Title of Paper: HPA Linearization for Next Generation Broadcasting Systems with Fast Convergence-Digital Predistortion

IEEE Transactions on Broadcasting, Volume 67, Issue 3, September 2021, pp. 776 - 790, ISSN (Print): 0018-9316, ISSN (Online): 1557-9611, Funding Agency: Mahindra École Centrale through the Project Energy Efficient Joint Optimization Techniques to Mitigate Non-Linear Effects of Power Amplifier in 5G Communication Systems (EMPOWER 5G) (Grant Number: MEC-2018-08)

DOI: [10.1109/TBC.2021.3081925](https://doi.org/10.1109/TBC.2021.3081925)

Co-authors: Hmaied Shaïek & Daniel Roviras

Dr AK Priya, MIE

Associate Professor

*Department of Civil Engineering, KPR Institute of Engineering and Technology, Coimbatore
akpriya@gmail.com*

Title of Paper: Removal of Heavy Metal Ion Concentrations from the Wastewater using Tobacco Leaves Coated with Iron Oxide Nanoparticles

International Journal of Environmental Science and Technology, Published (Online): 03 March 2021

DOI: <https://doi.org/10.1007/s13762-021-03202-8>

Co-author: Y Venkatraman



Publication by Members



Er Ramesh B Ranpise, MIE

Research Scholar

Civil Engineering Department, Sardar Vallabhbhai National Institute of Technology, Surat
d18ce017@ced.svnit.ac.in

Title of Paper: Development of Traffic Noise Prediction Model for Major Arterial Roads of Tier-II City of India (Surat) using Artificial Neural Network

Noise Mapping, De Gruyter, Volume 8, No 1, Open Access: 12 April 2021, pp. 172-184

DOI: <https://doi.org/10.1515/noise-2021-0013>

Co-authors: BN Tandel & Vivek A Singh



Er Krunal B Khiraiya, AMIE

Assistant Professor & Head

Mechanical Engineering Department, Gyanmanjari Institute of Technology, Bhavnagar
kbkhiraiya@gmail.com

Title of Paper: Diesel-fired Boiler Performance and Emissions Measurements using a Combination of Diesel and Palm Biodiesel

Case Studies in Thermal Engineering, Volume 27, October 2021, ISSN 2214-157X

DOI: <https://doi.org/10.1016/j.csite.2021.101324>

Co-authors: P V Ramana & Hitesh Panchal



Er Padam Jee Omar, AMIE

Assistant Professor

Motihari College of Engineering, Motihari, Bihar
sss.padam.omar@gmail.com

Title of Paper: Land Surface Temperature Retrieval from TIRS Data and its Relationship with Land Surface Indices

Arabian Journal of Geosciences, S.I. – CEC Framework, Volume 14, No 52, Article Number: 1897, Published (Online): 26 August 2021

DOI: <https://doi.org/10.1007/s12517-021-08255-0>

Co-author: Vikram Kumar



Er Soham Ghosh, AMIE

Engineering Manager, Black & Veatch, KS, USA
sghosh27@ieee.org

Title of Paper: A Hybrid Blockchain Consensus Algorithm using Locational Marginal Pricing for Energy Applications

2021 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), IEEE, Date of Conference: 21-24 April 2021, Date Added to IEEE Xplore: 14 May 2021, pp. 1-8, ISBN (Online): 978-1-6654-4067-7, ISBN [Print on Demand (PoD)]: 978-1-6654-1160-8

DOI: 10.1109/IEMTRONICS52119.2021.9422542

Co-author: Raj Sekhar Dutta

Publication by Members



Er Anurag Rajput, AMIE

Postgraduate Student

Thapar Institute of Engineering and Technology, Patiala

anuragrajput430@gmail.com

Title of Paper: A Comprehensive Study on the Influence of Supplementary Cementitious Materials on Physico-Mechanical, Microstructural and Durability Properties of Low Carbon Cement Composites

Powder Technology, Volume 394, Available Online 31 August 2021, pp. 645-668

DOI: <https://doi.org/10.1016/j.powtec.2021.08.081>

Co-authors: Rajesh Kumar, Shweta Goyal & Abhishek Srivastava

Dr S Kudiyarasan, FIE

Scientific Officer / E

Electrical Group, Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) (A Government of India Enterprise), Department of Atomic Energy (DAE), Kalpakkam

kudiyarasan@rediffmail.com

Title of Paper: Design and Implementation of Water Sprinkler System for Emergency Diesel Generator at Full Load in Nuclear Power Plant

Journal of The Institution of Engineers (India): Series C, Volume 102, Issue 5, October 2021, pp. 1129-1135

DOI: <https://doi.org/10.1007/s40032-021-00733-4>

Co-author: Kudiyarasan Swamynathan



Er S Rupesh, MIE

Independent Consultant

srupeshlec@gmail.com

An article authored by Er S Rupesh titled '**Corrosion under Insulation on Stainless Steel**' has featured under '**Maintenance and Reliability**' section of the Magazine '**Hydrocarbon Processing**' in the September 2021 issue.

Access URL:

<https://www.hydrocarbonprocessing.com/magazine/2021/september-2021/maintenance-and-reliability/corrosion-under-insulation-on-stainless-steel>

About the Author: Suthan Rupesh is a Consulting Mechanical Engineer based in Kerala, India. He has more than 17 yr of experience in the field of static equipment. He has also worked as a Lead/Senior Engineer for EPC companies such as Worley/Jacobs (Singapore), JGC Corp. (Saudi Arabia), Engineers India Ltd., Larsen & Toubro and Atkins (India). His research interests include shell-and-tube heat exchangers and corrosion studies. Mr. Rupesh is also a Member of The Institution of Engineers (India), and he holds a BEng degree in mechanical engineering from Lukhdirji Engineering College in Morbi, India.

Announcements

36TH Indian Engineering Congress

Theme

Engineers for Viable Technology and \$5 Trillion Economy



Organised by

The Institution of Engineers (India)

Hosted by: *Delhi State Centre* | Date: *26-28 December 2021*
Venue: *Vigyan Bhawan, Maulana Azad Road, New Delhi 110003*

IEI AWARDS

CALL FOR PAPERS

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. The prize-winning papers will be published in the Technical Volume of 36th Indian Engineering Congress.

The topics for the year 2021 are given hereunder

SAIL AWARD

Eco-friendly Steel Making for a Sustainable Future

DR M VISVESVARAYA AWARD

Usage of Green Hydrogen in Steel Industry

Intending contributors are requested to send the soft copy of the paper by email to award@ieindia.org (with subject heading Paper for **SAIL/Dr M Visvesvaraya Award**) and submit four nos. printed copies of their articles to :

Director (Technical)

The Institution of Engineers (India)
8 Gokhale Road, Kolkata 700 020.

Last date of submission: November 15, 2021

For downloading the template of paper and declaration form, please visit the following link:

https://www.ieindia.org/webui/IEI-Activities.aspx#Call_Papers

Announcements

36th Indian Engineering Congress

Registration

Category	Registration Fee
Corporate Members of IEI	₹ 3500 + 18% GST*
Non-members	₹ 4500 + 18% GST*
Industry/Research Organizations	₹ 5000 + 18% GST*
Sr. Technician*/Technician Members*, Students** of Engineering College and paper presenters in Technical Sessions	₹ 1500 + 18% GST*
Foreign Participants	\$ 500
Certificate of participation in Online Technical Sessions	₹ 200 + 18% GST

(*To be certified by Head of the Institution)

(**Attested Xerox copy of Identify Card; and Bonafide Student/Study Certificate issued by the Head of the Department / Principal of College must be attached with the Registration Form)

The fee payable by each delegate is as mentioned above and the amount should be mentioned in the enclosed Registration Form.

Delegates may deposit fees online also as per Bank details given below and forward us the UTR number as a confirmation of the deposit.

Souvenir

A Souvenir (in colour) will be published on this occasion. Rates for advertisement in the Souvenir are follows:

Category	Registration Fee
Back Cover Page	₹ 1,00,000 (3 delegates complimentary)
Inner Back Cover Page	₹ 75,000 (2 delegates complimentary)
Inner Front Cover Page	₹ 75,000 (1 delegate complimentary)
Full Page	₹ 50,000
Half Page	₹ 25,000

*GST as applicable

Exhibition

On this occasion, an exhibition is being organized to provide ample opportunities to industries to exhibit their products & services diversified stakeholders at Vigyan Bhawan, New Delhi.

Cost of each stall	₹ 50,000 + GST as applicable
--------------------	------------------------------

Stalls will be allocated on first come first served basis.

Sponsorship Opportunities

Platinum Sponsor	₹ 25 lakhs + GST as applicable
Gold Sponsor	₹ 15 lakhs + GST as applicable
Silver Sponsor	₹ 10 lakhs + GST as applicable
Bronze Sponsor	₹ 5 lakhs + GST as applicable
Sponsor	₹ 2 lakhs + GST as applicable

Company Logo of all the Sponsors will be suitably displayed at the Backdrop the other suitable places. The other opportunities to sponsors are also available such as sponsoring the Congress Lunches, Cultural Program, Congress Dinner & Kit Bag etc.

Facilities/Benefits to Sponsors

Sl No	Category of Sponsors	Free Delegates	Advertisement in Souvenir	Stall in Exhibition
1	Platinum Sponsor	15	Full Page Coloured	One
2	Gold Sponsor	10	Full Page Coloured	One
3	Silver Sponsor	5	Full Page Coloured	-
4	Bronze Sponsor	3	Half Page Coloured	-
5	Sponsor	2	-	-

Note:

GRANT OF SPECIAL CASUAL LEAVE FOR GOVERNMENT OFFICERS ATTENDING MEETINGS OF SCIENTIFIC INSTITUTIONS

An extract from Notification No. 74(4)/50-SR.III dated July 28, 1951 printed in the Bulletin Vol. I No. 1 September 1951, p-28 and No. 227(7)/50-SR, III dated December 10, 1953 printed in the Bulletin, Vol. 3 No 3 March 1964, p-14, issued by the Ministry of Natural Resources and Scientific Research, Government of India in regard to the grant of casual leave to such officers who desire to attend Meetings of scientific associations

Payment

Payments for delegate Fees, Advertisement & Sponsorship will be accepted through NEFT / RTGS / Online transfer / Bank Draft / Banker's Cheque to be made in favour of "The Institution of Engineers (India) A/c IEC 2021"; Bank Account No. : 212205500308; ICICI Bank Ltd.; Bank Branch : Mayur Vihar Phase-II, Delhi; IFS Code : ICIC0002122; PAN No. : AAATT3439Q; GST No. : 07AAATT3439Q1ZW.

For further enquiry / information regarding Sponsorship / Exhibition / Advertisement / Delegate etc., please contact :

Shri Dinesh Kumar, Chairman, Org. Committee, Chairman, IEI-DSC, Mobile : +91-9810718565
Shri R N Rajpoot, Co-Chairman, Org. Committee, Chairman, SQF-IEI, Mobile : +91-9717649404
Shri Praveen Kumar Singh, Secretary, Org. Committee, Director, SQF-IEI, Mobile : +91-9783694136

Call for Papers

Full-length papers for the **Annual Technical Volumes (ISBN numbered)** of different Engineering Divisions are invited by The Institution of Engineers (India) from eminent engineers, technologists, professionals, and researchers on identified themes as appended below.

These volumes intend to accommodate original Research articles; Review articles, Brief communications, Case studies and Articles of Professional Interest. Submitted manuscripts should not have been published previously, nor be under consideration for publication elsewhere. All manuscripts will be subjected to a suitable review process and thereafter accommodated in the Technical Volumes if found suitable. These Annual Technical Volumes will be released concurrently with the **36th Indian Engineering Congress** to be hosted tentatively during December 2021.

The paper (full length) should be submitted to respective email ids as indicated against each engineering disciplines on or before **30 November 2021**. The paper should be prepared following our standard paper template and must be accompanied by the duly filled-in 'Declaration Form' both of which are available on our website (**URL: <https://www.ieindia.org/webui/IEI-Publication.aspx#annual-technical-volume>**).

Aerospace Engineering Division

Volume No 5

Theme : **Small Satellites Initiatives in India**

On the Theme:

The small satellite is envisaged to provide platform for stand-alone payloads, which facilitate earth imaging and science missions within a quick turnaround time. Small satellites are miniaturized satellites with wider range of users, all over the world. Small satellites have several advantages over large satellites namely cost effective ways to test newer technologies, opportunities for local industry, bigger basket of potential users and thus a large variety of mission possibilities. Small satellites are transforming the dynamics and economics of space industry and ensure that space technology is no longer monopolized by nations, but is accessible to smaller and newer entities. As a space-faring nation for over last five decades, India is set to become the hub for the small satellite launch market, which is projected to be valued a substantial amount in near future. Start-ups will be the key drivers in this space, with a few among them on the final stages of developing low-cost solutions that conform to global standards. The recent reforms by the Government of India will further accelerate private sector participation in the sector. Although small spacecraft have existed for decades, in recent years, small satellites have gained considerable importance, particularly in defense sectors, which have recently gained prominence owing to technological advances in their development and integration into the armed services of the major space faring countries across the world.

Sub-themes:

- * Technological Innovations, Business Opportunities and Commercialization of Indian Space Industry
- * Role of MSMEs and Start Ups in Small Satellite initiatives and development
- * Cryogenic Engine Technology and Indian Space Market
- * Design and Advancement in Satellite Launch Vehicle
- * Business Initiatives for Components, Sub-assemblies and Spare Manufacturing in Aerospace Startups
- * Provisions and Norms to initiate Start Ups and Entrepreneurship in Aerospace Sector

Type of Papers

- Original Contribution
- Case Study
- Article of Professional Interest

submit your articles to:
asdb@ieindia.org

Call for Papers

Marine Engineering Division

Volume No 5

Theme :

Advancements in Ship Building Technology — Way Ahead towards New Normal

On the Theme:

The COVID-19 pandemic has underscored the global interdependency of nations and set in motion new trends, which is reshaping the maritime transport landscape. The Indian maritime sector is at a pivotal moment facing not only immediate concerns resulting from the pandemic but also longer-term considerations, ranging from shifts in supply-chain design and globalization patterns to changes in consumption and spending habits, a growing focus on risk assessment and resilience-building, as well as a heightened global sustainability and low-carbon agenda. The sector is also dealing with the knock-on effects of growing trade protectionism and inward-looking policies. The shipbuilding industry is now witnessing an unparalleled transformation with growing demand to build new vessels and expand geographic routes, tight budgetary measures, and most importantly, the need to deliver reliable designs at affordable costs. The shipbuilding industry is now characterized with complex value chain, which involves construction of large structures. Moreover, rising demand for flexible ships poses a challenge due to the traditional construction approach prevalent in the industry. In the presence of these demanding market requirements, advanced technologies such as Industrial Internet of Things (IIoT) plays a crucial role in modernizing fleets in a cost-effective manner and also within a shorter time span. IIoT addresses various constraints pertaining to capital allocation, design, and build, and more importantly, supports optimal utilization of vessels during the commissioning and decommissioning phase of new and existing ships.

Sub-themes:

- * Technological Advancement in Shipping Industry in New Normal
- * Global Recovery in Shipping in New Normal: The Way forward
- * Maritime Industry 4.0
- * Digital Transformation of Ship Building Industry – The Way Ahead
- * Advancements in Shipbuilding Value Chain
- * Reorientation of post pandemic marine workforce and Seafarers

Type of Papers

- Original Contribution
- Case Study
- Article of Professional Interest

submit your articles to:
mrdb@icindia.org

Call for Papers

Mechanical Engineering Division

Volume No 6

Theme :

Applications of Artificial Intelligence and Machine Learning in Mechanical Engineering — The Post Pandemic Pathway

On the Theme:

Amidst the ongoing global crisis, the engineers, scientists, and professionals have so far played a stellar role and have constantly scaling up their efforts and have been responsive to the challenges posed by the COVID-19 pandemic. The application of Machine Learning (ML) and Artificial Intelligence (AI) during the first wave of pandemic encouraged the researchers to outline new angles to explore different fields of mechanical engineering contributing to uninterrupted industrial growth of the country. The rapid advancements in the field of fluid mechanics leads to, unprecedented volumes of data driven experiments, field measurements, and large-scale simulations at multiple spatiotemporal scales. Moreover, Machine Learning algorithms can augment domain knowledge and automate tasks related to flow control and optimization. Tribology is another area which has been empowered with AI, ML, Big Data tools and led to evolution of 'Tribo-informatics / Intelligent Tribology'. As we embrace the new normal, most of the facets of mechanical engineering will be data driven and AI and ML need to be vectored in to optimize workspace, product and services.

Sub-themes:

- * Study of IC Engine in light of Artificial Intelligence (AI) and Machine Learning (ML)
- * Design, Operation and Maintenance of Turbine: A Machine Learning Approach
- * Advancement in Boiler Design, Operation & Maintenance through AI and ML Approach
- * Advancement in Machine Design through AI and ML Approach
- * Advances in Thermodynamics and Heat Transfer: The Machine Learning Approach
- * Neural Network in Kinematics: Challenges and Opportunities
- * Predictive Maintenance and Failure Analysis: AI and ML Approach
- * Tribology and Condition Monitoring: Supervised and Unsupervised Learning Approach
- * Fluid Mechanics and Heat Transfer: A Data Driven Approach
- * Application of Machine Learning in Mechanical System Modeling and Simulation
- * Assessment of Behaviours of Mechanical Systems through AI and ML
- * Machine Installation and Commissioning through Machine Learning Approach
- * Artificial Intelligence based Heating, Ventilation and Air Conditioning
- * Application of Artificial Intelligence in Oil and Gas Industries
- * Bio-medical Engineering: A Machine Learning Approach

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Metallurgical & Materials Engineering Division

Volume No 5

Theme: Integrated Computational Materials Engineering

On the Theme:

Integrated computational materials engineering (ICME) is an emergent field that aims to integrate computational materials science tools into a holistic system that can accelerate materials development, transform the engineering design optimization process, and unify design and manufacturing. Even though in its nascent state, ICME presents a grand challenge laden with prospects of achieving significant economic benefit and accelerate innovation in the engineering of materials and manufactured products. Papers from eminent engineers and technologists on contemporary issues having technical relevance to the theme shall be included in this volume. It is expected that the articles will be of academic values, and reflect experience of professional engineers.

Sub-themes:

- * Computer Simulations at Different Time Scales,
- * Multi scale Aspects of Materials,
- * Creating Newer Materials,
- * Thermodynamics of Materials Engineering,
- * Principles of Engineering Practice,
- * Fundamentals of Materials Science and Engineering,
- * Electronic Structure Theory and Methods,
- * Applications of First-Principles Methods,
- * Molecular Dynamics (MD),
- * Material Structures using Finite Element Methods (FEM);
- * Crystal Plasticity Theory etc.

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- Article of Professional Interest

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Mining Engineering Division

Volume No 4

Theme: **Future of Mining**

On the Theme:

The evolution of technology, from advanced data analytics to artificial intelligence (AI), has always had the potential to transform the mining industry by realizing operational efficiency improvements, enhancing productivity, improving safety performance, empowering employees to do more meaningful work, and allowing communities to be more prosperous. The COVID-19 crisis has exposed the siloed nature of mining companies and highlighted the need for integrated operations. This is likely to accelerate the adoption of digital technologies, artificial intelligence, and analytics in the mining industry. This volume will discuss what future has in store for the mining sector and the likelihood of vectoring in the intelligent, integrated operations in mining in a comprehensive manner. Papers from eminent engineers, technologists, professionals and researchers on contemporary issues having technical relevance to the theme shall be included in this volume.

Sub-themes:

- * Climate-Smart Mining
- * Responsible Sourcing (Decrease environmental footprint, Increase social footprint)
- * Adoption of low carbon product strategies
- * Collaboration to set new mining standards based on environmental, social and governance (ESG) principles
- * Digitalization for more sustainable use of resources & lowering input cost
- * Automation for enhancing productivity
- * Smart mine power distribution and energy management
- * New frontiers: deep sea, space exploration
- * Resilient Mining Practices

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Production Engineering Division

Volume No 6

Theme :

Applications of Machine Learning, Deep Learning and Artificial Intelligence in Manufacturing — The Way Forward

On the Theme:

The advent of fourth industrial revolution ushered in huge industrial reforms and a paradigm shift in manufacturing from conventional product oriented labour intensive approach to a customer oriented data driven one and reinstated that promoting digital innovations coupled with intelligent decision making is the way forward. With the introduction of IIoT, Digital Twins, Smart Factories, Cyber-Physical Systems, Indian manufacturing sector has created a niche for itself in terms of productivity, efficiency and overall growth. Smart manufacturing revolution has enabled the manufacturing units to achieve timeless manufacturing goal with the objective to produce products with stated degree of precision and accuracy in a cost effective manner. In this context, Artificial Intelligence and Machine Learning are the core technologies which have provided stimulus for this transformation. These technologies, leveraged by Industry 4.0, namely Internet of Things, Advanced Embedded Systems, Cloud Computing, Big Data, Cognitive Systems, Virtual and Augmented Reality needs to be leveraged further as we prepare ourselves for adopting a newer, resilient and a self-reliant manufacturing ecosystem.

Sub-themes:

- * Data Driven Decision Making in Production Planning and Control
- * Advances in Machine Tools: Artificial Intelligence and Deep Learning Approach
- * Assessment of Industrial Automation in Machine Learning Environment
- * Deep Learning and Smart Manufacturing – The Way forward
- * Application of Big Data Analytics in Manufacturing
- * Smart Warehousing, Warehouse Optimization and Inventory Management
- * Artificial Intelligence and Robotics in Welding Industry
- * Lean and Agile Supply Chain: Machine Learning Approach
- * Digital Fabrication and 3D Printing
- * Industry 4.0 and Project Management: The Way Forward
- * Business Analytics and Knowledge Management
- * Assessment of System Reliability, Availability and Maintainability through Machine Learning Approach

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Textile Engineering Division

Volume No 5

Theme:

Development and Application of Functional Textiles

On the Theme:

Functional textiles, as we all know, are textiles with integrated functions of controlling or adjusting according to its application area. Functional textiles, over the years, have developed a niche for itself in textile industry and the associated fraternity. This range includes breathable, heat and cold-resistant materials, ultra-strong fabrics (e.g. as reinforcement for composites), new flame retardant fabrics (e.g. intumescent materials), optimized textile fabrics for acoustic properties, etc. Functional textiles became more and more important materials for various applications and interest in them grew year by year. Papers from eminent engineers, technologists, professionals and researchers on contemporary issues having technical relevance to the theme shall be included in this volume. It is expected that the articles will be of academic values, and will provide a comprehensive coverage of the subject.

Sub-themes:

The said volume will cover major sectors of Development and Application of Functional Textile, and will accommodate manuscripts on the following genre:

- * Based on the type of garment
 - Active wear
 - Performance wear
 - Ready to wear
 - Seamless wear
- * Based on the type of fiber
 - Polyester and advancements
 - Viscose
- * Based on the type of functions
 - Anti-bacterial
 - UV-protection
 - Temperature regulating
 - Water and oil repellent
- * Based on the application area
 - Geotextiles
 - Personal Protection
 - Medical
 - Hygiene
 - Sports and Leisure
 - Military/ war
 - Industrial textiles

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