

IEI *Epitome*

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Members

in the News

Dr Suresh Vishwakarma, MIE

Senior Electrical Engineer, and Adjunct Professor, University of Trinidad and Tobago, Chairman, Chartered Engineers Pacific, Vancouver, Canada

The University of Trinidad and Tobago is pleased to offer an appointment as an Adjunct Professor in its Utilities Engineering Unit for a period of one year in the first instance, commencing March 1, 2021.

Nominated as the Executive of the Group Committee of Chartered Engineers Pacific (formerly the Western Canada Group of Chartered Engineers) for the 2021 session.



Dr Om Prakash, FIE

*Professor and Former Head, Department of Aerospace Engineering, UPES, Dehradun
Recognised as a Senior Member of the American Institute of Aeronautics and Astronautics*

Recognised by IEEE Aerospace and Electronic Systems Society as a Senior Member in good standing, denoting a personal and professional commitment to the advancement of technology and awarded with the 2021 Certificate of Membership.

Dr A V Sudhakara Reddy, MIE

Associate Professor, R&D Coordinator, Department of Electrical and Electronics Engineering, Malla Reddy Engineering College (Autonomous), Maisammaguda, Secunderabad, Telangana

Received Certificate of Grant for Innovation Patent from Australian Government for the invention titled 'An Efficient and Automated Smart Heating Bucket'. The proposed invention aims at implementing and designing an efficient and automated smart heating bucket that can heat the water to the required temperature by consuming as less time as possible. This invention will also reduce the waiting time that occurs between two different users. The smart heating bucket will revolutionize the existing water heater coils by outstanding in terms of cost and time.



Dr Kumar K, AMIE

Associate Professor, Department of Electrical and Electronics Engineering, Sri Venkateswara College of Engineering & Technology (SVCET), Tirupathi, Andhra Pradesh

Published Indian Patent on 'Household Water Usage Auditing, Assessment Report and Scheduling' vide Application No 202141001828A dated 22 January, 2021.

Has been honoured with Award of Excellence in Research from Novel Research Academy for his academic contribution in Science and Technology under the category of Electrical & Electronics Engineering specialization having adjudicated during academic year 2020-2021 by Novel Research Academy, Puducherry.

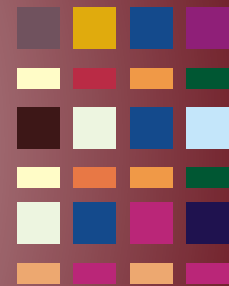
Dr Indrasen Singh FIE

Senior Professor and Dean, National Institute of Construction Management and Research (NICMAR), Goa

Conferred with the Gem of International Education Excellence Award by Indian Solidarity Council for his outstanding achievements and remarkable role in the field of Education at New Delhi on 15 March 2021.



Publication by Members



Mr Mohammad Ashraf Fazili, FIE

Former Chief Engineer PWD J&K State and Past Chairman, Jammu and Kashmir State Centre, IEI

Email: shahishaharyar2@gmail.com

Title of Paper: "Sewerage & Drainage issues of Srinagar City", *Kashmir Reader*, 2021.

<https://kashmirreader.com/2021/03/27/sewerage-drainage-issues-of-srinagar-city/>



Abstract: The paper traces the prehistoric formation of a vast lake between the mountains by closing the gorge at the outfall of River Jhelum by an earthquake, Kashmir being an earthquake zone, splitting the gorge by another earthquake, thus draining of the lake, leaving its remnants like Wullar, Dal, Manasbal, Khushal Sar, Gil Sar, Anchar Sar, and other wetlands. The valley is prone to floods due to its geographical structure. Srinagar is as old as 250 BC built by Asoka at Pandrethan. Many kings tried to locate the city at a higher altitude to avoid flooding, but the Dogra Maharajas made the city in a flood zone bound to give headaches to the generations to come. A comprehensive Sewerage & Drainage Scheme for Greater Srinagar City was prepared to retain Consulting Engineers but adequate funds were not provided, hence no substantial progress could be made in this direction however due to paucity of funds no headway could be made beyond taking up of pilot sewerage scheme for the area around Brari Numbal Lagoon, & Khushalsar (two mini lakes within the city) for a population of about one and a half lakh people.

Keywords: Karewa Lake, Kashmir Valley, Srinagar City, September-14 Floods, Youngusband, Maharaja Partap Singh, Sir Walter Lawrence, Solid Waste Disposal Scheme of Greater Srinagar City, Low-Cost Sanitation Scheme for Srinagar City with UNICEF assistance, Development of Small & Medium Towns under UNDP program, Improvement of the existing drainage system of Srinagar City.

Mr Balkar Singh, FIE

Advisor (Energy Efficiency), Former Joint Director, Punjab Energy Development Agency, Chandigarh

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Title of Paper: "Net Zero Energy Building (NZEB) Design" *Journal of The Institution of Engineers (India) Series A*, 102, 2021, pp 237-247.

<https://doi.org/10.1007/s40030-020-00500-1>

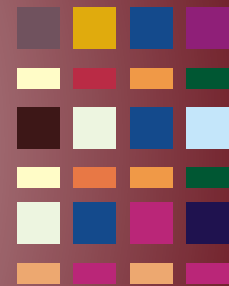
Co-Authors: Sanjay K Sharma, Poonam Syal



Abstract: Presently, buildings are expected to be designed to meet higher energy performance, sustainability to enjoy healthy and comfortable environment for the occupants. With the growing public awareness of environment issues, the energy efficient design concept for construction of buildings is being accepted to reduce the day-to-day energy demand of the buildings. In this scenario, net zero energy building design is one of the solutions to combat global warming by reducing energy demand and simultaneously use of renewable energy to run the operations of the building. In this paper, the focus is given on net zero energy building design criteria for composite climate zone. The technical parameters of planning, orientation, envelope, heating ventilation and air-conditioning (HVAC), use of energy efficient materials and integration of renewable energy system in designing the net zero energy building were analyzed and evaluated. The net zero energy balance equation was established from the building design strategies by evaluating the total annual energy demand, reduction in annual energy consumption implementing energy efficient technologies and annual renewable energy generation under the boundary of the building. This equation of net zero energy building was validated on design and construction of BISA building located at Ludhiana, Punjab falls under the composite climate zone. The analysis, evaluation and validation were carried out on system-generated model of the building. The reduced annual energy demand of the building of 432,742 kWh was met from the renewable energy generation of rooftop solar photovoltaic power plant of capacity 300kWp and satisfied the net zero energy balance equation.

Keywords: Net Zero Energy; Balance Design; Strategies Passive; Active Design Renewable Energy.

Publication by Members



Dr S Manikandan, AMIE

Assistant Professor and Head of IT, E G S Pillay Engineering College (Autonomous), Nagapattinam

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Title of Paper: “Effective Energy Adaptive and Consumption in Wireless Sensor Network Using Distributed Source Coding and Sampling Techniques”, *Wireless Personal Communication*. 118, 2021, pp 1393-1404.

<https://doi.org/10.1007/s11277-021-08081-3>

Co author: M Chinnadurai



Abstract: Multimedia is the process of handling multiple medium of messages over network with high rate data services in wireless cellular area networks. Communication is the process of exchanging information form one service to another. In wireless networks are significantly growth of affecting network performance and energy consumption. The major problem is end to end delay in each node and meets the quality of services. The followings are considered for implementing wireless sensor network such as reduces the network delay, propagation delay and energy consumption. The sensor node can sense the encoding value and reduce the network traffic delay using mitigation method. This paper propose a unique approach to provide simple routing services with reduced traffic delay, end to end delay network performance and to achieve better performance using Distributed Source Coding and Effective Energy Consumption methods. In this paper we use optimal early detection algorithm for improving network performance and energy consumption problem. An iterative Shannon fano and Toker method is used for finding optimal solution of each node values. Network Simulator-3 is used for simulating network environments and setup the experiments. Our proposed method shows high data rate, good performance and low energy consumptions. The results compare with existing methodologies and performance is good.

Keywords: Wireless Sensor Networks; Effective Energy Consumption; Distributed Source Coding; End-to-end Propagation; Delay Optimal Early Detection.

Dr Mohd Zameeruddin, MIE

Associate Professor and PG Coordinator, Department of Civil Engineering, MGM's College of Engineering, Nanded

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Title of Paper: “Performance-based Seismic Assessment of Reinforced Concrete Moment Resisting Frames”, *J King Saud Univ. Eng. Sci.*, 33(3), 2021, pp153-165.

<https://doi.org/10.1016/j.jksues.2020.04.005>

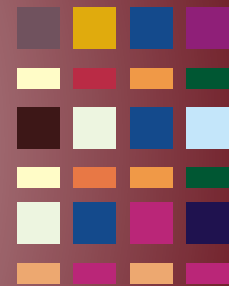
Co author: Keshav K Sangle



Abstract: The performance-based seismic design has two primary concerns: (a) appropriate quantification of the uncertainties associated with the performance evaluation process, and (b) satisfactory characterization of the associated structural damage for direct incorporation into the design or performance evaluation methodology. This study attempts to address these primary concerns by evaluating the performance of reinforced concrete frame using nonlinear static procedures. For this, fifteen-moment resisting frames designed following the guidelines of Indian seismic codes were subjected to different lateral load patterns. The seismic performance is investigated in terms of fundamental periods, roof displacements, interstory drift ratio, base shear, and modification factor and was compared with various performance limits. The obtained results showed disagreement with Indian seismic code provisions, especially, towards the fundamental time period, upper and lower bound values of base shear drift ratio and modification factor.

Keywords: Performance-based Seismic Evaluation; Example Building; Nonlinear Static Pushover Analysis; Seismic Performance; Modification Factor.

Publication by Members



Afzal Husain Khan, MIE

Lecturer, Civil Engineering Department, Faculty of Engineering, Jazan University, Jazan, Kingdom of Saudi Arabia

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Title of Paper: “Application of Advanced Oxidation Processes Followed by Different Treatment Technologies for Hospital Waste Water Treatment”, *Journal of Cleaner Production*, 269, 122411, 2020, pp 1-14.

<https://doi.org/10.1016/j.jclepro.2020.122411>

Co-authors: Nadeem A. Khan, Sirajuddin Ahmed, Aastha Dhingra, Chandra Pratap Singh, Saif Ullah Khan, Ali Akbar Mohammadi, Fazlollah Changani, Mahmood Yousefi, Shamshad Alam, Sergij Vambol, Viola Vambol, Anwar Khursheed, Imran Ali

Abstract: Hospital effluents are the sources for complex high percentage of micropollutants and till date no specific treatment have been investigated for the removal of pollutants. These effluents and their complex characteristics pose resistance to unit operation which undergoes in hospital wastewater treatment plants (WWTPs). In other words such complex contaminants are unable to removed completely through conventional treatment processes. The pharmaceutical residues entering into the environment may pose a serious threat to the water resources around the world. In past few years environmental scientists are more concerned towards the effluent generated from medical care facilities, community health centers and hospitals. In this study, seven multi-specialty hospitals with non-identical pre-treatment were selected for 3-aspects i.e. conventional wastewater characteristics, high priority pharmaceuticals and microbial analyses. The present work is to evaluate efficacy of advanced wastewater treatment methods with regard to removal of these 3-aspects from hospital effluents before discharge into a sewage treatment plant (STP). Based on test results, two out of seven treatment technologies i.e. MBR and CW effectively reducing conventional parameters and pharmaceuticals from secondary and tertiary treatments except regeneration of microbes were observed in tertiary level by these two treatments. The result also suggests that, MBR exhibited 100% elimination of ibuprofen, carbamazepine, frusemide while CW indicated 100% elimination of ofloxacin. Furthermore, two combinations of advanced oxidation process viz. ozonation (O₃) and peroxone process (O₃-H₂O₂) were demonstrated to oxidize pharmaceuticals. The operational key factors for AOP involve pH, O₃ supply, contact time, and H₂O₂ concentrations. Based on pharmaceuticals reduction efficiencies, the conventional O₃ alone is more efficient as compared to combine O₃-H₂O₂ treatment. Hence results confirmed that, MBR coupled with ozone process proved as an optimal technology among the seven technologies for the pre-treatment of hospital effluent.

Keywords: Wastewater Characteristics; Pharmaceuticals Residues; Advanced Oxidation Process; BOD; COD; Escherichia Coli; Coliform.



Mr Chandan Kumar, MIE

Manager, System Study and Reliability, Eastern Regional Load Despatch Centre, Kolkata, POSOCO

Email: chandan8240000@gmail.com

Title of Paper: Experience of PSS Tuning in Indian Power System”, *IEEE 2020 21st National Power Systems Conference (NPSC 2020), Gandhinagar, 2020.*

<https://doi.org/10.1109/NPSC49263.2020.9331918>

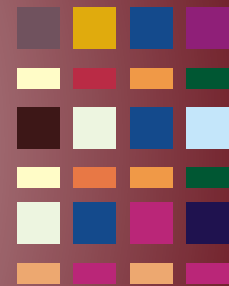
Co authors: Saibal Ghosh, Saurav Sahay, Alok Pratap Singh, Akash Modi, Surajit Banerjee

Abstract: This paper presents power system stabilizer tuning experience in the Indian power system. It explains the various regulatory provision and standards to be complied with for the PSS tuning. It compares the tuning procedures adopted by various utilities in India. It also shares a few case studies to highlight the challenges observed during PSS tuning and procedure overcoming these issues.

Keywords: Indian Electricity Grid Code; Indian Grid; Power System Stabiliser.



Publication by Members



Mr Pranoy Roy, AMIE

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Title of Paper: "Effectiveness of Shear Walls for Seismic Resistance of Multi-storey Buildings in India", *Preceding of National Conference on Structural Engineering NCRASE – 2020, NIT Jamshedpur, 2020, pp 51-57.*



Abstract: Soft storey buildings performs poorly during an earthquake. The analysis of open multistory buildings for earthquake loads is an important point of consideration for analysis and design and providing suitable solutions for earthquake resistance of the buildings. Our research is based on the analysis of an (G+6) multistory building under the effect of dead loads, live loads and seismic forces for Seismic Zones of India. Staad-Pro software is used for this investigation and all relevant loading have been applied using IS 875-Part 1 & 2, and Seismic loading and combinations are referred from IS 1893-2002. In the post-processing mode, the analysis for beams, columns and footings were performed followed by the calculation of the seismic weight and base shear for each floor. The worst load condition is identified for the maximum deflection, moment and shear force of the structural components. The drift index and base shear force were the key components to understand the seismic performance of the building with and without shear walls, The results indicates that the storey drift and deflection of the structural components crossed the allowable limits as prescribed in IS: 456-2000 for bare framed structures in higher seismic zones of India. Shear walls were introduced to the structure to reduce the effect of lateral forces and design the building for serviceability and collapse. The post analysis shows significant improvement in storey drift, base shear, deflection and bending of the structural components of the building. The addition of shear walls in the building, the building became structurally stiffer to resist the axial forces, shear force and drift index due to both gravity loads and lateral loads.

Keywords: Shear Wall; Seismic Zones; Drift Index; Earthquake Load.

Mr Basavaraj S S, AMIE

Assistant Professor, Department of Electronics and Telecommunication, Annasaheb Dange College of Engineering & Technology, Ashta, Sangli.

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Title of Paper: "Low Resistance Ohmic Contact on ZnO Thin Film Revealed by Schottky Barrier Height", *Silicon 2021.*

DoI: <https://doi.org/10.1007/s12633-021-00949-0>

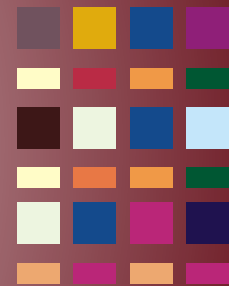
Co-authors: Aniruddh Bahadur Yadav, Vinod Kumar, N V L Narasimha Murty, K Singh

Abstract: A high performance electronic device can be fabricated by achieving a high quality metal thin film Ohmic contact to intrinsic ZnO. In the present work, the low specific contact resistance Cr/Au metallization scheme deposited on n-type intrinsic 100 nm RF sputtered ZnO (Zinc oxide) thin film on SiO₂/p-Si (100), an integrated circuit (IC) compatible substrate is utilized for the first time. Several metallization schemes were reported in the literature till date but not chromium to ZnO. Schottky Barrier height method was used to analyze the specific contact resistance which was obtained from the current-voltage characteristics. Thermionic emission carrier transport is considered at the interface for barrier height analysis. Low specific resistance was initiated in this work owing to the single-crystalline and smooth surface of the ZnO thin film revealed by X-Ray Diffraction (XRD) and Atomic Force Microscope (AFM) analysis. The simulation of the device structure was performed by using ATLAS software. The experimental results were finally compared with simulation results and were found to be in close agreement with each other.

Keywords: ZnO Thin Film; Bottom-gate Phototransistor; RF Sputtering; UV Detection.



Publication by Members



Mr Rakesh Naru, MIE

Research scholar -UPES DDN, Regional Manager after Sales - JLRI

Email: rakeshnaru@gmail.com

Title of Paper: "Auto Industry, Trust and Commitment as Determinant During, Covid 19 in India", *Journal of Psychology and Education*, 57 (9), 2020, pp 1659-1677.

<http://psychologyandeducation.net/pae/index.php/pae/article/view/516>

Co-authors: Dr Arvind Kumar Jain, Dr Sushil Kumar Rai



Abstract: We could find that lot of hard work has been diligently carried on the theory of Trust and Commitment. It also appears that it is used by managers not only during the customer relationship activity but also during the epidemic like Covid 19, in India. The objective of the research is to see the practical implementation of Morgen and Hunt model of Trust and commitment in Indian automobile Industry. This research would also benefit from taking the view that if it is what is needed to curve the ecumenical and financial impact on the auto Industry in India. The frame work developed would surly help the auto industries to investigate whether all the points are being covered or not. This study has both practical and social implications. The methodology used in the study is Case study method, where different actions taken by auto industry are evaluated, to bring the trust back in the retailers. It also shows the evaluation of auto industry from the Covid 19 impact economically. The practical implications are being discussed with in the research in findings, however social implications are part of Trust and commitment during Covid 19. The social change, were there, that only recognizes the side of life. Also, it also indicated that we were too busy in our lives run by only growth, to acknowledge it before. The present status is that the international community has joined hands together in global empathy to stand united during this tough time. Philanthropic initiatives have been created across the world and humanitarian aid offered by biggest nation with billionaires of the country donated millions of dollars to help save people lives and business. (Khuloud Al Omian, 2020). This paper is an attempt to see the implications and practical application of theory of Trust and commitment during crises like Covid19. During the case study method what is being adopted to know the impact of Morgen and Hunt theory, we have tried to evaluate all the circulars what different automobile companies came up to support the retailer network in India. We could find max o them tried to support the retailers through various schemes. and we could also find the industry reviewing and coming out of this difficult situation in the month of July and Aug 2020, when correlated with various aspects of Trust and commitment theory, we could find that the theory stands true for difficult times also. The whole part of the research is being divided into various steps and the existing model is being evaluated so that the new model can be also suggested which is outcome of the support extended in the difficult time in India. This research took around 5 months as we started from the critical time to the time when the things become better in mass auto industry in India. A proper literature review was also done to find the existing model outcome, a literature review as being mentioned in the introduction is supported by all evidence and data. The circular where collected form the market form various interactions with people who got this support. I am sure this would help to benchmark the support every industry should come up for the sustainable during the difficult times.

Keywords: Customer Relationship Management (CRM); Customer Retention; Value for Money; Customer Relationship; Service Advisor; Time Update; Customer Satisfaction; Auto Car Dealership; Trust and Commitment; Theory of Trust and Commitment; Mogen and Hunt Theory.

Ms Faeza N S, AMIE

Government Engineering College, Electronics and Communication Engineering Department, Thrissur, Kerala

Email: faeza93@gmail.com

Title of Paper: "Identification of Shockwave and Muzzle Blast in a Gunshot Signal using Frequency Analysis Techniques", *2020 International Conference on Power, Instrumentation, Control and Computing (PICC)*, 2020, pp 1-4.

<https://ieeexplore.ieee.org/document/9362435>

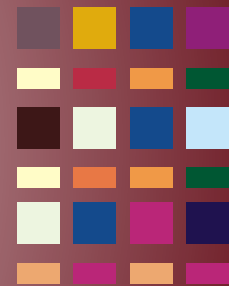
Co-authors: Job Chunkath, Nimmy Pathrose, Rajesh KR



Abstract: The development of an acoustic sensor system used for locating the source of the firing of a weapon is highly challenging. The main challenge is identifying shockwave (SW) and muzzle blast (MB) from the fired signal and computing their arrival time. Incorrect identification of these signals will lead to a false location of the source. This paper discusses three joint time-frequency analysis techniques to identify the shock wave and muzzle blast in a gunshot signal. Techniques include Short Time Fourier Transform (STFT), Continuous Wavelet Transform (CWT), and Synchro Squeezing Transform (SST). Gunshot signals fired from various weapons at different positions were analysed using these techniques.

Keywords: Muzzle Blast; Shock Wave; STFT; SST; Wavelet.

Publication by Members



Dr Ahmad Faiz Minai, MIE

Associate Professor, Electrical Engineering Department, Integral University, Lucknow

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Title of Book Chapter: “Metaheuristics Paradigms for Renewable Energy Systems: Advances in Optimization Algorithms. In: Malik H., Iqbal A., Joshi P., Agrawal S., Bakhsh F.I. (eds) *Metaheuristic and Evolutionary Computation: Algorithms and Applications. Studies in Computational Intelligence*”, 916. Springer, Singapore.

DoI: https://doi.org/10.1007/978-981-15-7571-6_2

Co-authors: H Malik

Abstract: In recent days, many novel techniques and technologies are developing for power generation. Most of them are in its developed phase but its efficiency and reliability are low. Some of them have no running cost but its installation is costly. Some others are not cost effective and its cost to benefit ratio is poor. Because of all these reasons optimization techniques are required to expand the productivity, reliability and decrease the expense by optimal utilization of the resources and controlling methods. This chapter is mainly deals with basic and important metaheuristics optimization techniques used for power generation through renewable energy resources. Metaheuristic optimization approaches like Particle-Swarm Optimization (PSO), Differential-Evolution (DE), Tabu-Search (TS), Simulation-Annealing (SA), Genetic-Algorithm (GA), Artificial-Bee Colony (ABC), Ant-Colony Optimization (ACO), Cuckoo-Search (CS), and Biogeography-Based Optimization (BBO) are applicable on power generation using renewable energy resources. Some optimization techniques are good for solar PV system like PSO, ACO, ABC, DE etc., and some other optimization techniques like GA, CS, TS, BBO etc. for Battery storage using renewable hybrid system and design wind farm layouts. Applications of various metaheuristics optimization approaches for different renewable energy and hybrid systems are present in this chapter.

Keywords: Optimization; Metaheuristic; Renewable Energy; Design; Battery; Solar-PV; Wind Farm.

Title of Book Chapter: “Performance Evaluation of a 500 kWp Rooftop Grid-Interactive SPV System at Integral University, Lucknow: A Feasible Study Under Adverse Weather Condition. In: Malik H., Fatema N., Alzubi J.A. (eds) *AI and Machine Learning Paradigms for Health Monitoring System*”. *Studies in Big Data*, 86, Springer, Singapore.

DoI: https://doi.org/10.1007/978-981-33-4412-9_24

Co-authors: T Usmani, Atif Iqbal

Abstract: Currently, power generation using solar PV source is in advance stage in India. Government policies and subsidies attract citizens of India to install solar PV system at their commercial and domestic places. Some of the design models and tariffs are also very favorable for them, such as RESCO and CAPEX. To cope with the world in the field of power generation using renewable sources, Integral University opt a RESCO model to install 1 MW rooftop grid-interactive solar PV system. In this paper, a feasibility study of 500kWp is done under adverse weather condition, i.e., in every month of January for last 3 years because maximum variation of temperature and insolation takes place in this month and that is why the system generates minimum amount of energy. Comparison of real data through SCADA with solar PVGIS and PVSYST is also presented in this paper with the complete description of installed system and detailed results at different temperature and insolation at the end.

Keywords: Rooftop SPV System; Grid-interactive; SCADA; Solar PVGIS; PVSYST; Performance Ratio.

Title of Paper: “Artificial Bee Colony Based Solar PV System with Z-Source Multilevel Inverter Conference: 2020”, *International Conference on Advances in Computing, Communication & Materials (ICACCM)*, 2020, pp 187-193.

<https://ieeexplore.ieee.org/document/9213060>

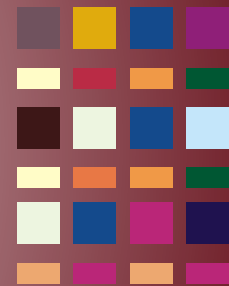
Co-authors: T Usmani, A Iqbal; MA Mallick

Abstract: In recent days there is a great advancement takes place in the field of power conversion. There are so many novel converters are in practice whose performance is very good and that's why they attract the users for its maximal use. In most of the cases DC to AC power conversion is done by multilevel inverters (MLIs) in industries for higher rating requirements. MLIs are in demand these days because of its efficient operation and modular nature. In this work first of all best PWM switching strategy is finalized. Then this switching strategy is applied on all the three basic MLIs i.e. Diode Clamped (DC), Flying Capacitor (FC) and Cascaded MLIs. Comparison is also made among these MLIs regarding THD and no. of components required. In the last best switching with optimized topology is applied on z-Source MLI consisting Artificial Bee Colony optimization technique in Solar PV system. Finally a converter of very less THD is achieved with all the advantages of switching, MPPT, z-Source and Cascaded Multilevel inverters.

Keywords: Switches, Inverters, Matlab, Load modeling, Topology, Mathematical model, Pulse width modulation



Publication by Members



Dr Kumar K, AMIE

Associate Professor, Department of Electrical and Electronics Engineering, Sri Venkateswara College of Engineering & Technology (SVCET), Tirupathi, Andhra Pradesh

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Title of Paper: “Performance Evaluation of Fuel Cell Fed Electric Vehicle System with Reconfigured Quadratic Boost Converter”, *International Journal of Hydrogen Energy*, 46(11), 2021, pp 8167-8178.

<https://doi.org/10.1016/j.ijhydene.2020.11.272>

Co authors: Ramji Tiwari, P Venkata Varaprasad, Chalia Babu, K Jyotheeswara Reddy

Abstract: The performance evaluation of 1.26 kW fuel cell fed electric vehicle system with reconfigured Quadratic Boost Converter along with the neural network based maximum power point tracking algorithm is presented in this paper. The acceptance of EV in modern society is relevant for the creation of pollution free environment. The main reason for creation of excessive pollution is transportation by the mode of roadways, with the own internal combustion engines by using crude oil as primary energy source. In this paper, a 1.26 kW Proton Exchange Membrane Fuel Cell (PEMFC) fed electric vehicle is designed in MATLAB/Simulink environment. To integrate PEMFC to brushless DC (BLDC) motor are configured Quadratic Boost Converter is designed for high static converter voltage gain. The performance of the proposed EV system is analysed with perturb and observer method and neural network based MPPT control techniques and obtained results are compared at different fuel cell input temperature conditions with respect to different time periods.

Keywords: Fuel Cell; Quadratic Boost Converter; Maximum Power Point Tracking; Voltage Gain; Neural Network.

Title of Paper: “Performance Evaluation of Photo Voltaic System with Quadratic Boost Converter Employing with MPPT Control Algorithms”, *International Journal of Renewable Energy Research (IJRER)*, 10(3), 2020, pp 1083-1091.

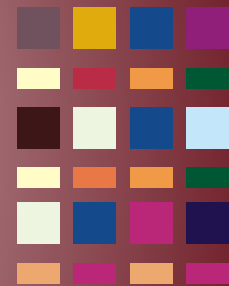
<https://www.ijrer.org/ijrer/index.php/ijrer/article/view/10800>

Co authors: S Kiran Rafi, Ramji Tiwari, S Saravanan, P Pandiyan, N Prabakaran

Abstract: This article explores the performance of the photovoltaic (PV) system with a quadratic boost converter (QBC) employing different MPPT control algorithms. The extraction of maximum power from high penetrating renewable energy sources (RES) and to step up the low voltage renewables into the desired voltage level with minimal power semiconductor switches are the foremost targets in the present renewable energy systems. Ample MPPT control techniques and power converter are available in the present research era. In this paper, the quadratic boost converter is premeditated for the analysis of the PV system with real-time data in the southern region of 13039129.311N 79029109.311E. The quadratic boost converter has a higher voltage gain value with lower voltage stress and switching loss when compared with conventional boost converter. The efficacy of MPPT techniques in a 400 W PV system is evaluated by considering the P&O and ANFIS based MPPT controllers and the obtained results show the ANFIS based MPPT controller gives the best and stable output compared to the conventional P&O algorithm with real-time data in MATLAB/Simulink environment.

Keywords: High Voltage Gain; MPPT; PV System; Quadratic Boost Converter; Renewable Sources.

Publication by Members



Mr Prashant Basavaraj Bhagawati, AMIE

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Title of Paper: “Electrochemical Technique for Paper Mill Effluent Degradation using Concentric Aluminum Tube Electrodes (CATE). *Journal of Environmental Health Science and Engineering* 2021, pp 1-12.

<https://doi.org/10.1007/s40201-021-00627-8>

Co-author: Chandrashekhar Basayya Shivayogimath



Abstract: In this study, Taguchi experimental design was used to optimize operating parameters for the degradation of paper mill effluent using electrochemical (EC) process with two-dimensional concentric aluminum tube electrodes (CATE). For this purpose, four significant experimental factors were used in four levels pH (6–9), electrolysis time (10–40 min), voltage (6–12 V) and surface area (357–624 cm²). The process parameters were optimized, through performing L16 orthogonal array of Taguchi technique, for the removal of chemical oxygen demand (COD) and turbidity. The percent COD and turbidity reductions were transferred into an accurate S/N ratio for a larger value is the better (LBT) response. The study presents a unique method of finding optimum combination of process parameters to illustrate their effect on the turbidity and COD reduction. The treatment conditions for the maximum elimination of the pollutants were second level of pH (7), third level of ET (30 min), fourth level of voltage (12 V) and second level of surface area (446 cm²). The confirmation experiment results were within the confidence intervals (CI) indicating an acceptable agreement between predicted and observed values. Based on the p-values, the electrolysis time and voltages were found to be the most significant factors for both COD and turbidity reduction. The findings of research indicated, that the Taguchi method can be used successfully for the treatment of paper industry effluent by electrochemical technique.

Keywords: Concentric Aluminum Tube Electrodes (CATE); S/N ratio; COD; Taguchi Method; Analysis of Variance.

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Email: abhayksoni@gmail.com

Title of Paper: “History of Mining in India”, *Indian Journal of History of Science (IJHS), Indian National Science Academy (INSA), New Delhi, 55(3), 2020, pp. 218-234.*

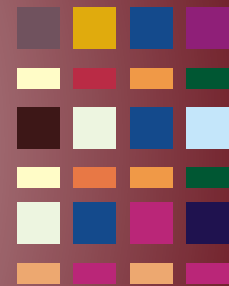
https://insa.nic.in/writereaddata/UploadedFiles/IJHS/Vol155_3_2020__Art02.pdf



Abstract: Mining of minerals is an age-old process continuing since centuries. Indeed, it was started with pick-axe and chisel, way back in pre-Harappan times and pre-Christian era. An insight into the history of mining in India, one of the oldest civilizations of the world, will enable the readers to know how our ancestors were digging minerals from the earth womb with minimum tools and inadequate infrastructure. Describing the history in limited pages is not possible, however, an attempt has been made on the basis of available authentic records. The first third of this paper describes ancient mining and metallurgy in general, encompassing India as well as known ancient civilizations of the world. It is followed by a focussed history of the coal mining industry in India. The third part focuses on mineral-wise excavation history including metallic artefacts like copper, silver and gold with present insight. In brief, this paper attempts to provide a useful insight with reference to India for all readers, directly or indirectly, and whether connected with mining/mineral industry or not.

Keywords: Ancient Time; Civilization; Coal Mining; History; Mining; Metal Mining.

Publication by Members



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Title of Paper: "Optimal Automatic Generation Control with Hydro, Thermal, Gas and Wind Power Plants in 2-area Interconnected Power System," *Electric Power Components and Systems*, 48(6-7), 2020, pp 558–571.

<https://www.tandfonline.com/doi/full/10.1080/15325008.2020.1793829>

Co-authors: N Hakimuddin, I Nasiruddin, T S Bhatti

Abstract: This paper explores automatic generation control (AGC) of a more realistic 2-area multi-source power system comprising hydro, thermal, gas, and wind energy sources-based power plants in each control area. The wind power plants (WPPs) have been growing continuously worldwide due to their inherent feature of providing eco-friendly sustainable energy. But, operations of WPPs are associated with system stability problems due to lack of inertia. However, WPPs do not participate in the elimination of mismatch between generation and demand by AGC but disturbance can be injected by the WPPs due to the stochastic nature of wind energy. An optimal controller based on full state feedback control theory is designed to conduct the study. The system dynamic performance analysis is carried out for 1% step load disturbance in corresponding control areas. It is observed that the system dynamic graphs of deviation in area frequency and tie-line power are significantly improved with the implementation of optimal AGC controller compared to GA tuned classical controller. It has also been shown that the WPPs aid the increase in load disturbance when the input wind power reduces but it negates the effect of increase in load disturbance for increase in wind energy to the WPPs.

Keywords: Wind Power Plant; Hybrid Energy Sources; Automatic Generation Control; Optimal Control; Eigenvalue Analysis; Modern Control Theory.



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Title of Paper: "Uncontaminating Concrete Mix Using Sugarcane Bagasse Ash: A Review on its Hardened Properties", *IOP Conference Series: Materials Science and Engineering*, 1017, 012002, *International Conference on 'Advances in Materials Processing & Manufacturing Applications' (iCADMA 2020) 2020, Jaipur, .*

<https://iopscience.iop.org/article/10.1088/1757-899X/1017/1/012002/pdf>

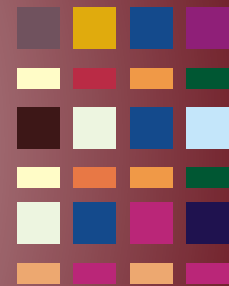
Co-authors: Gowri Nanda Das, Sanjay K Kuriakose, Dani Jacob, Aarathi Prabha S

Abstract: Concrete is one among the most used material for construction other than water. Cement is the important constituent of concrete. During the production of cement high amount of carbon dioxide is emitted and is responsible for global warming. High amount of cement production is causing environmental problem. Use of agro-waste materials like bagasse ash, increases the strength characteristics of concrete and also causes proper disposal of the waste materials. In this paper, use of sugarcane bagasse ash, an agro-waste product, as a partial replacement of the cement in concrete mix and its effect on the strength parameters of concrete are also identified on the basis of compressive strength, split tensile strength and flexural strength. This waste usage is very economical and also have positive impacts on minimizing environmental pollutions.

Keywords: Sugarcane Bagasse Ash; Concrete; Workability; Compressive Strength; Flexural Strength; Split Tensile Strength.



Publication by Members



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Title of Paper: “Development of Mathematical Model and Optimization of GMA Welding Parameters of IS 2062 Grade A Steel Weldments”, *Frattura ed Integrità Strutturale*, 15 (56), 2021, pp 84-93.

<https://www.fracturae.com/index.php/fis/article/view/3006>

Co-author: Wajahat Ali



Abstract: In this experimental works, the effect of GMA welding process parameters, such as arc voltage, wire feed speed, and gas flow rate on the mechanical quality of IS 2062 structural steel of grade A has been studied. Process parameters play an important role in determining the weld quality. In this research work response surface methodology (RSM) technique via design expert (DOE) 12 version software was applied to determining the weld quality and also to develop a mathematical model that can predict the main effect of the above said parameters on weld quality i.e. toughness and hardness. A set of experiments has been conducted to collect the data using a central composite design and ANOVA was used to predict the impact of welding parameters on toughness and hardness and Comparison also made between the actual result and predicted value and from the result that is clear that toughness and hardness of weldment is significantly affected by arc voltage, wire feed speed, and follow by gas flow rate.

Keywords: Response Surface Methodology; Centre Composite Design; Modeling; Optimization; GMA Welding; Mechanical Quality.

Title of Paper: “The Impact of Heat Input on the Mechanical Properties and Microstructure of High Strength Low Alloy Steel Welded Joint by GMA Welding Process”, *Engineering Solid Mechanics*, 9(3), 2021, pp 299-310.

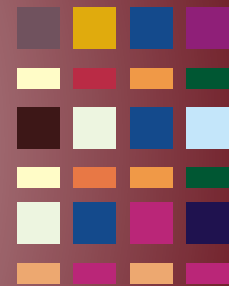
http://www.growingscience.com/esm/Vol9/esm_2021_7.pdf

Co-authors: Mr Rajnish Singh, Saurabh Kumar Gupta

Abstract: The basic aim of this study was to find a relationship between heat input and mechanical properties of high strength low alloy steel (HSLA) welded joints and also elaborate its effect on microstructure. The combined effect of welding current, voltage and speed i.e. Heat Input on mechanical properties of High Strength Low Alloy Steel (ASTM A242 type-II) weldments have been studied in the present work. HSLA steel work pieces were welded by Gas metal arc welding (GMAW) process under varying welding current, arc voltage, and welding speed. Total nine samples were prepared at different heat input level i.e. 1.872 kJ/mm, 1.9333 kJ/mm, 2.0114 kJ/mm, 2.1 kJ/mm, 2.1956 kJ/mm, 2.296 kJ/mm, 2.4 kJ/mm, 2.5067 kJ/mm and 2.6154 kJ/mm It was observed that as heat input increases the ultimate tensile strength and microhardness of weldment decreased while impact strength increased and it was also observed that on increasing the heat input grain size of microstructure tends to coarsening it is only due to decreasing in cooling rate.

Keywords: HSLA; Micro Hardness; SEM; UTS; Microstructure; HAZ

Publication by Members



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Title of Paper: "A Novel Intrinsic Space Vector Transformation based Solar Fed Dynamic Voltage Restorer for Power Quality Improvement in Distribution System", *Journal of Ambient Intelligence and Humanized Computing*, 2021.

<https://link.springer.com/article/10.1007%2Fs12652-020-02831-0#citeas>

Co-author: Viswaprakash Babu, K. Shafeeque Ahmed, & Y. Mohamed Shuaib

Abstract: Electric power aims to generate electrical energy and distribute to the end-user application at an acceptable voltage level. The quality of power will be affected by various factors like voltage sag, swell, harmonic and Power interruptions, etc. The major reason behind the deteriorations of the power quality is nonlinearity in loads which draws out harmonics. Due to this nonlinearity, all loads cause disturbances in the voltage waveform. In this paper, an Intrinsic Space Vector Transformation (ISVT) based solar fed Dynamic Voltage Restorer (DVR) is connected in series with the power grid to compensate for the reactive power. The operation of the proposed DVR model produces reactive power based on the voltage sag and voltage swell. The ISVT controller produces an appropriate pulse to the voltage source inverter (VSI), which delivers a suitable reactive power to compensate for the sag and swell voltages in the grid. Moreover, solar fed DVR reduces Total Harmonic Distortion (THD) value at the time of voltage sag mitigation. The performance of the proposed system is evaluated by analyzing the power consumption and efficiency. Finally, the proposed system is compared with other existing methods. The simulation is carried out using MATLAB SIMULINK 2017b software.

Keywords: Dynamic Voltage Restorer; Enhanced Space Vector; Pulse Width Modulation; Intrinsic Space Vector Transformation; Voltage Source Inverter; Total Harmonic Distortions.



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Title of Paper: "Production of Waste Plastics Oil and Its Prospective use in a Variable Compression CI Engine", *Journal of Hazardous, Toxic, and Radioactive Waste*, 25 (3), 2021.

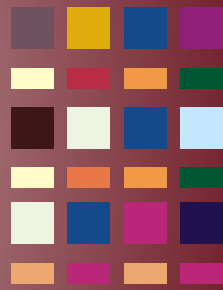
<https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29HZ.2153-5515.0000606?af=R>

Co-authors: Sudhansu Sekhar Sahoo, Achyut Kumar Panda

Abstract: The present investigation reports the production of pyrolytic plastic oils and their performance in compression ignition (CI) diesel engines with different oil and additive blends. Experimental investigation has been conducted on a four-stroke single-cylinder variable compression diesel engine at a steady engine speed of 1,500 rpm with a different blend of pyrolytic plastic oil (PPO) and ethanol with diesel for various load conditions. Parametric studies are conducted for blend proportion of 10%–20% and compression ratio of 16–18. The engine thermal efficiency is found to be augmented significantly by 2.67% and specific fuel consumption reduced by 0.59% at maximum engine load for 60D20PPO20E to that of diesel. The brake specific fuel consumption is also diminished for fuel mixtures by increase of concentration of additives in the fuel blend than diesel. The overall improvement in engine performance is found at a 20% blend of PPO and ethanol in diesel with the highest compression ratio of 18. The novel correlation for brake thermal efficiency with respect to influencing parameters has been developed.

Keywords: Variable Compression Ratio; Performance; Brake Thermal Efficiency; Exhaust Gas Temperature; Ethanol; Pyrolysis Plastic Oil.





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Title of Paper: “Numerical Studies on the Shear Behaviour of Near Surface Mounted RC Deep Beams with Longitudinal Holes”, *International Journal of Engineering Research & Technology (IJERT)*, 10 (02), 2021, pp 473-477.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3793853

Co author: Shibir B

Abstract: Near Surface Mounting (NSM) is one of the retrofitting methods which is widely used for the strengthening of structural members. Strengthening using NSM reinforcement improves the ultimate load bearing capacity of the member. This study mainly focuses on the numerical investigation on the shear behaviour of near surface mounted reinforced concrete beam under various parameters. The study investigates the ultimate capacity of the beam with longitudinal hole and beam without longitudinal hole. The hole size adopted for the study are 50mm, 65mm, 75mm and 85mm. The study concentrates the strengthening of RC deep having longitudinal hole at a position 120mm from the bottom to the centre of the hole. Both horizontal as well as inclined alignment of the NSM bar were adopted. The ultimate shear capacity of the beam with and without hole by strengthening using NSM bar in both horizontal and inclined orientations are examined under twopoint loading. The capacity of the beam was maximum in the case of beam with longitudinal hole strengthened with inclined NSM.

Keywords: Longitudinal Hole; NSM, RC Deep Beam; Ultimate Capacity.

Title of Paper: “Hollow Core FRP-Concrete Steel Column with Inner Square Steel Tube Subjected to Eccentric Loading”, *International Journal of Engineering Research & Technology (IJERT)*, 10 (02), 2021.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3793844

Co-author: Jishnu MV

Abstract: Hollow Core FRP- Concrete- Steel (HCFCS) columns are an advancement over hollow core columns, in which concrete is confined between an outer FRP tube and an inner steel tube. They consists of different types of materials and hence, combines and make advantage of all these materials. Steel tube in these columns itself act as a formwork and also as longitudinal and shear reinforcement. The concrete sandwiched between FRP tube at outside and steel tube inside is effectively confined. Outer FRP and inner steel tube offer continuous confinement to the concrete core, thus improving the strength and ductility of column. They are mainly used as bridge columns in seismic areas. This study is concerned with the behavior of Hollow Core FRP- Concrete- Steel columns with inner square steel tube subjected to eccentric loading. Finite Element study was done in Ansys Workbench. Various parameters were examined including the thickness of steel tube, type of fiber and the shape of column section. HCFCS column with inner square steel tube has shown a larger ultimate load compared to the column with inner circular steel tube.

Keywords: Hollow Core; FRP; Concrete; Steel.

Book Review

A to Z Linux

Dr A P Manu, FIE

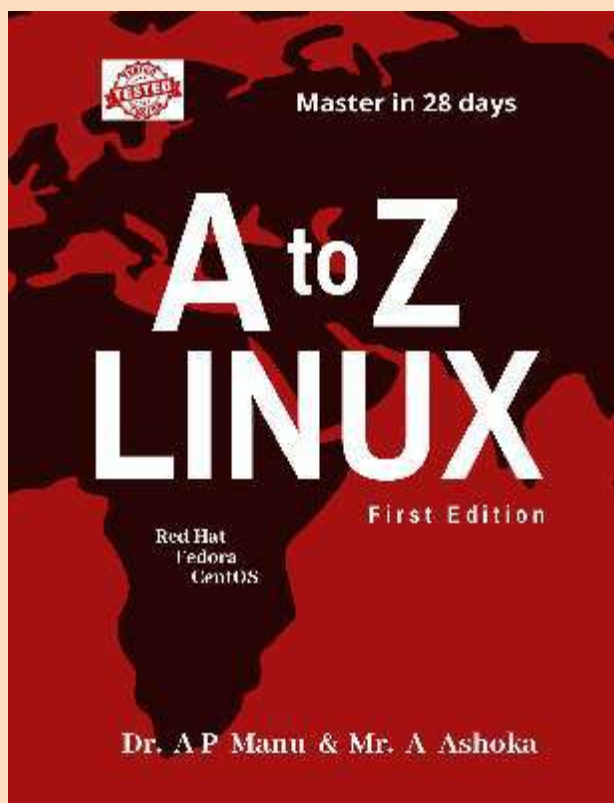
Department of Computer Science and Engineering

PES Institute of Technology and Management, Shivamogga, Karnataka

Mr A Ashoka

TM Technologies

E-mail: manuap@rediffmail.com



Numerous such technical books are available in the market, but the speciality of this book rests in Mastering Linux servers without anybody's help in just 28 days. And also getting fundamentals strong through hands-on expertise. It is written especially for novices who want to get into the corporate world/higher education.

Possible difficulties that are usually faced by people envisioned and attempted to give a solution in an easily understandable format. So, anybody can start learning with this book directly. The content of this book is practically tested and found working satisfactorily on CentOS 7 & 8, Fedora, and Red Hat OS.

The book starts with setting up of own lab using crimping; to verify the functionality, configuring 14+ different well-known servers such as NFS, FTP, NTP, HTTP, DNS, Mail, DHCP, Samba, MySQL. Finally setting OpenStack Cloud and its application. It also helps in cracking global certification exams like CompTIA N+, RHCSA, RHCE, Red Hat OpenStack, and many more, which is necessary for the System/Network administrator. For online review, refer <http://apmanu.in/book.html> or

<https://www.amazon.in/dp/B0865YH1MF>

Publisher : Gouthami Publications, Basaveshwara Nagar, Shivamogga, Karnataka

Book Review

Metro Rail in India for Urban Mobility

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Former Chief Engineer, Northern Railway, E-mail: agarwalmm31@gmail.com

Sudhir Chandra, FIE

Former Member Railway Board and Former Director, Metro Railways, Bangalore

K K Miglani, FIE

Former Deputy Chief Engineer Track, Northern Railway

About the Book

The book '**Metro Rail in India for Urban Mobility**' is a special book for all professionals dealing with Metro Rail Technology whether working in office in planning and designing of Metro Rail or in field for construction and maintenance. This comprehensive book contains 15 chapters comprising about 700 pages including 80 pages of Picture (Photo) Gallery of Metro Rail around the world and 400 computer developed drawings/photographs covering almost all aspects of Metro Rail Technology and Urban Mobility. It is a useful book for all Professionals, who are involved in planning, construction and maintenance of Metro Rail in India and in other countries.

Guide to all professionals, who are involved/interested in planning of Urban Mobility particularly in India using alternative modes (other than metro rail) like Light Rail Transits/'Metrolite', "Metro-on-Tyres", "Metro-Neo", Aerial Ropeway and Regional Rapid Transit System (RTS) etc., which are more cost effective, take less time to construct and are more suitable in areas of less traffic.

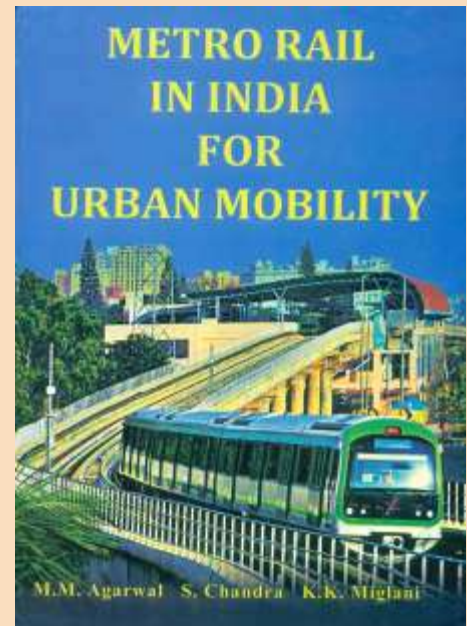
Reference book for libraries, professionals, mobility planners and intelligentsia, who are interested in knowing about modern Technologies for Urban Mobility being used at international level like Technologies for first and last mile Connectivity, Digitalisation, Artificial Intelligence, Internet of Things, Building Information Modelling, Big Data Processing, Communication Based Train Control (CBTC) etc.

Special Features of the Book:

This special book gives insight on all aspects of "**How to plan for a new Metro as well as prepare Detailed Project Report (DPR) of Metro Rail Project**". It deals extensively with the construction of viaducts, tunnels, elevated and underground stations, tracks as well as construction of depots, procurement and management of rolling stocks, power supply, traction systems, train control, signalling, interlocking, telecommunication, testing and commissioning.

The book has been brought out after detailed study, research and technical discussions of various aspects of Metro Rail Technology. General policy and decisions taken by RDSO, Ministry of Urban Development and of other Departments of the Government of India about various aspects of Metro Rail Technology, are described in brief.

The book gives practical guidance to all professionals working on Metro Rail Projects. Details are given about innovative methods devised and adopted to suit the local geological and environmental conditions to overcome the site working constraints particularly in underground works.



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34th

National Convention of Marine Engineers

November 12-13, 2021

Hosted by: Visakhapatnam Local Centre

Venue : Visakhapatnam

Theme

Contemporary Developments in
Maritime Technologies

CALL FOR PAPERS

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The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body that encompasses 15 engineering disciplines and gives engineers a global platform for sharing professional interest. IEI has membership strength of above 0.8 million. Established in 1920, with its headquarter at 8 Gokhale Road, Kolkata-700020, IEI has served the engineering fraternity close to a century. During this period of time, IEI has been inextricably linked with the history of modern-day engineering.

In 1935, IEI was incorporated by Royal Charter and remains the only professional body in India which has been accorded this honour. Today, its quest for professional excellence has given it a place of pride in almost every prestigious and relevant organization across the globe. It provides a vast array of technical, professional and supporting services to the Government, Industries, Academia and the Engineering fraternity, operating through its 125 Centres located across the country and 6 overseas chapters. Besides, IEI has bilateral agreements with about 31 international bodies and membership of another 8 international bodies of the developed nations across the globe.

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Call for Papers

We are pleased to share that Visakhapatnam Local Centre of The Institution of Engineers (India) is organising 34th National Convention of Marine Engineers on the theme **Contemporary Developments in Maritime Technologies** during 12-13 November, 2021.

Introduction

For the past many years, marine engineering challenges were from oil & gas sector such as construction of large offshore platforms, shipment of large volumes of crude, laying of piping and cables. However, with fading fossil fuel reserves, focus is slowly shifting towards renewable energy sources. Associated with this is the trend of cables of heavy weights replacing conventional piping/cables. Alternative fuels are being tried out for marine applications as fossil fuels are on decline. Some of these fuels are low sulphur fuels, bio fuels and gas fuels such as

liquefied natural gas. Another major challenge being discussed today is emissions from marine vehicles and its impact on environment. Hence, it is imperative to come out with approaches for marine pollution and waste control/management leading to green ocean environment. Maritime security poses a great challenge for India due to its long coastal area. With increasing threat of terrorism through sea route, technologies for coastal surveillance assumed significance.

Autonomous Underwater Vehicles have tremendous applications in both civil and defence sectors. They pose exciting challenge for engineers to exploit robotics in varieties of applications. Integrated electric propulsion concept is catching up fast to replace conventional mechanical transmission with electrical transmission of energy. In one of its variants, it caters for even power supply for other services onboard the ship other than propulsion. Rise of automation in maritime supply chain along with demand for autonomous shipping has led to increasing use of Artificial intelligence in marine industry. Adopting AI and Robotics provide competitive edge for quicker and efficient turnaround of systems. Hybrid designs both in power supply topology and marine propulsion lead to smart ships of future. Industry 4.0 is revolutionizing the way of connectivity through cyber physical systems and it implies degree of digitization decides a yard's competitiveness. Sensors are the eyes and ears of marine platforms and hence advances in this domain are of high importance. Similarly, deeper and longer endurance sea applications require advances in materials used in marine industry.

Objective

This two day National Convention will address contemporary developments in maritime technologies with special focus on selected subthemes. Globally, maritime community is experiencing several disruptive changes that will refine shipping and marine sector. The purpose of the National Conference is to highlight the impact of recent developments in marine technologies and challenges being faced by the marine engineering community for sustainable development. The Conference provides a platform to exchange ideas and concepts in various subthemes of the Conference for marine professionals including Engineers, Academicians, Researchers, and Scientists. Advancements in Information and Communication Technologies are making almost every domain of engineering multidisciplinary or interdisciplinary.

At the outset, IEI is hosting the 34th National Convention of Marine Engineers and a National Conference on Contemporary Developments in Maritime Technologies at Visakhapatnam and decided to invite Papers from academicians, Scientists, industry representatives, R& D organizations, Entrepreneurs, PG Students embracing the principal theme and associated sub-theme as follows.

Sub themes

Autonomous Underwater Vehicles

Integrated Electric Propulsion

Alternative Fuels

Industry 4.0 in marine industry

Artificial Intelligence in marine systems and Robotics

Offshore Renewable Energy
Green Marine Environment
Hybrid platform designs
Maritime Security challenges
Advances in materials and sensors

The list above is indicative and papers will not be limited to them. Relevant papers in related domains will be considered for inclusion.

Guidelines for Authors

The authors are requested to submit the Synopsis by e mail to visakhapatnamlc@ieindia.org based on original contributions leads to innovations, plans for development, observations, findings, critical survey and case studies, which are invited for discussion in the National Conference.

Nodal Dates

Last date of submission of extended abstracts	June 30, 2021
Intimation of acceptance of abstracts	July 10, 2021
Last date of submission of full length Paper	August 30, 2021
Last date for acceptance of full length Paper	September 30, 2021
Last date of Registration	October 20, 2021

Based on the acceptance of Synopsis, Authors intending to submit a manuscript for 34th National Convention of Marine Engineers are advised to adhere to the guidelines as mentioned below.

- ❖ Synopsis of Paper within 500 words with maximum five key-words have to be submitted first and after acceptance of the same, full text of the Paper has to be submitted.
- ❖ Synopsis will be reviewed by domain experts and the decision will be communicated to those authors whose synopsis is accepted.
- ❖ Full Text Paper should be prepared in line with the follows.
- ❖ Papers should be camera-ready in MS-Word format, not exceeding 3000 words in length excluding figures, tables, appendices.

- ❖ The language of the Publication is English. The mode of presentation should be in third person.
- ❖ The Template for preparation of article is attached for ready reference of the authors.
- ❖ SI units should be used wherever possible. Other units, if used, should be given only in parentheses preceded by SI units.
- ❖ Mathematical symbols should be typed and care should be taken to differentiate between similar characters (e.g, l and I), upper and lower case letters and superscripts and subscripts.
- ❖ Lengthy mathematical proofs and derivations and extensive test data are discouraged. If absolutely essential, they should be given as appendices.

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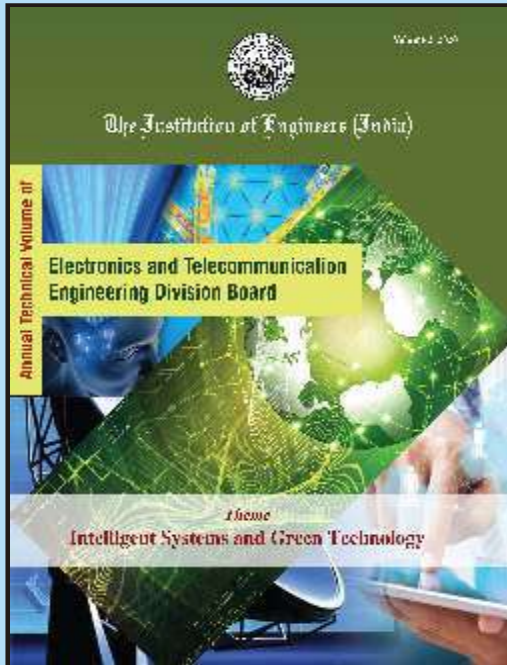
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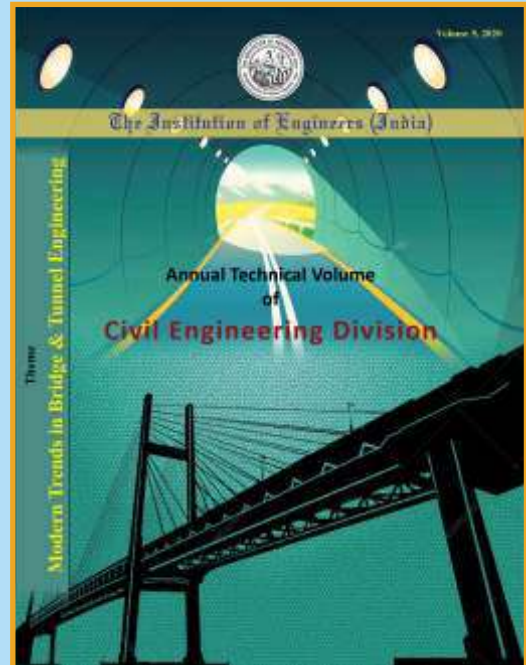
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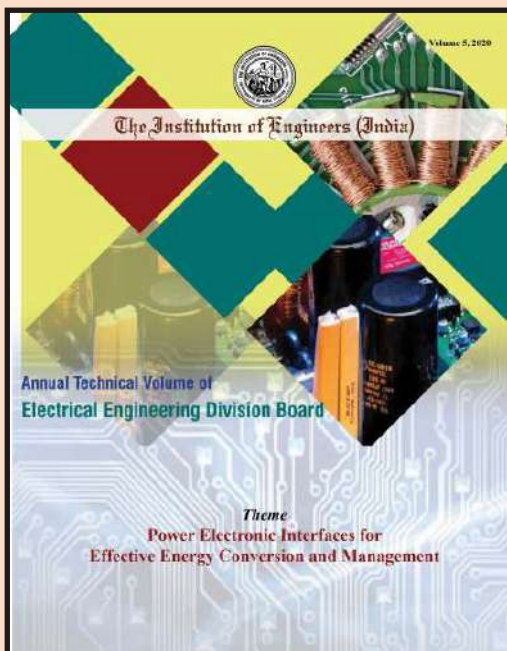
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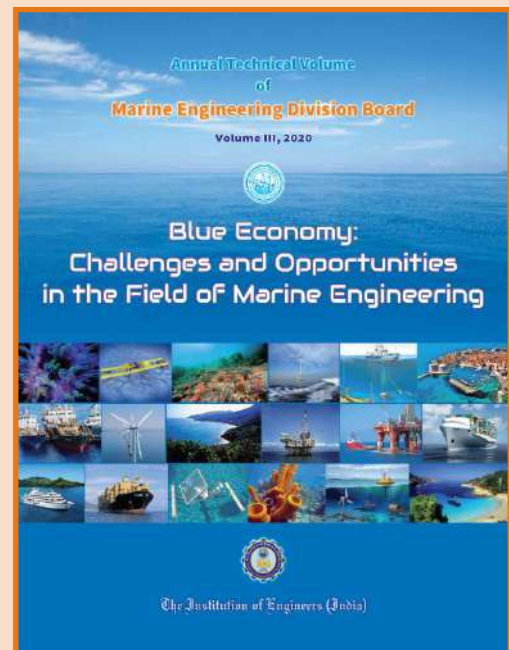
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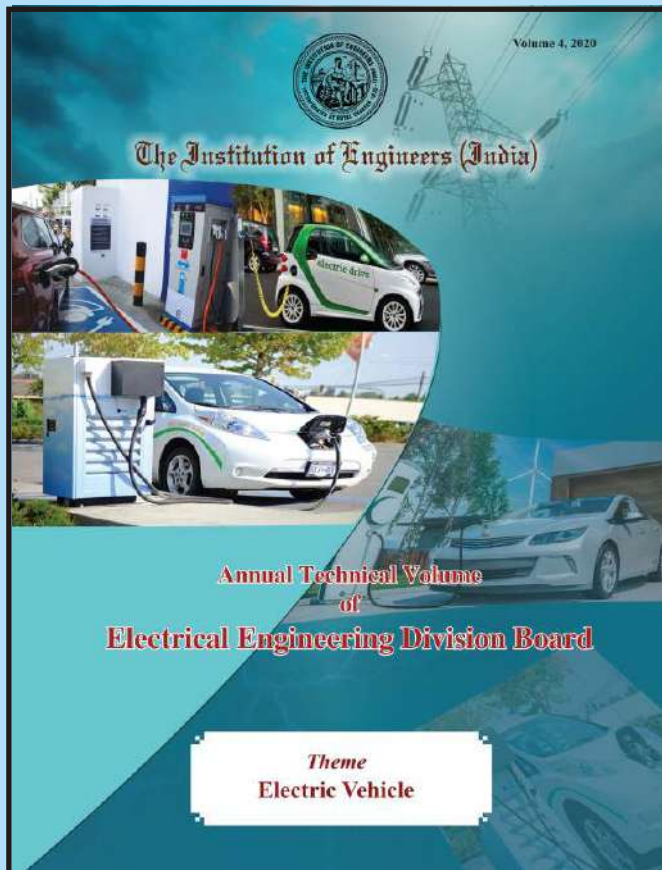
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Opportunities in the Field of
Marine Engineering

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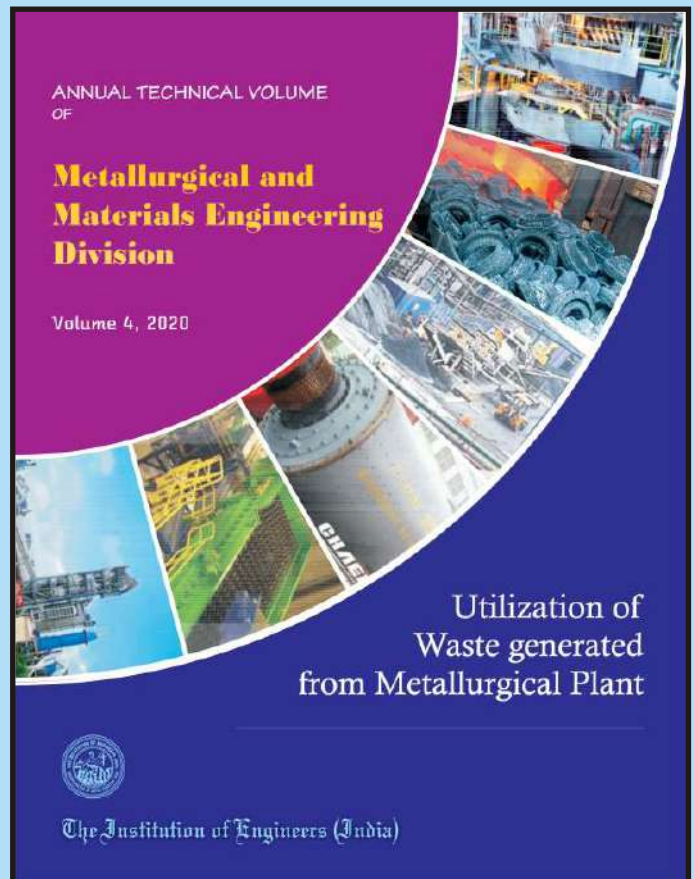
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Theme Electric Vehicle

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Theme Utilization of Waste Generated from Metallurgical plant

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