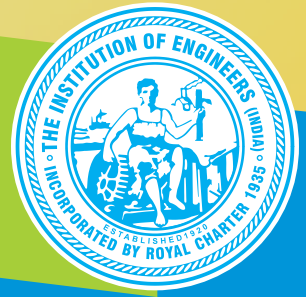


IEI EPITOME



Volume 9 | Issue 2 | February 2024

A Century of Service to the Nation

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Maj Gen (Dr) MJS Syali, VSM (Retd)
Secretary & Director General

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Notification for IEI R&D Grant-in-Aid

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To promote appropriate technology, assist in building up design & research talents and, most importantly, to help in nurturing potential R&D venture amongst engineering students pursuing Diploma/UG/PG/PhD courses. The Institution of Engineers (India) had instituted the R&D Grant-in-Aid program way back in 2001.

Every year, the Institution invites applications for funding industry-oriented R&D projects and research initiatives aimed at improving the life-style of common people from engineering students pursuing full time Diploma/UG/PG/PhD engineering program in AICTE/UGC/NAAC approved Institutions / Colleges / Universities. The application form and guidelines are available in our website <https://www.ieindia.org>. The projects should be carried out under the guidance of faculty members who are Corporate Members of IEI. Membership criteria for student(s), guide(s) and institution(s) are as follows:

Project Category	Student/Applicant Membership	Guide(s) Membership	Institutional Membership
1. Diploma	Exempted [Membership of Student Chapter is desirable]	AMIE/MIE/FIE	Not Mandatory
2. UG (BE/BTech/ Equivalent)	'Student Member' (SMIE)	AMIE/MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
3. PG (ME/MTech/ Equivalent)	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank
4. PhD	AMIE/MIE/FIE	MIE/FIE	Applicant's Institute should preferably be an Institutional Member with NBA/NAAC Accreditation or valid NIRF Rank

The soft copy of the duly filled-up applications (in editable format), as per the proforma available on our website www.ieindia.org, should be sent through email to research@ieindia.org and one printed copy of the same should reach the following address:

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

Kindly go through the guidelines (visit link: <https://www.ieindia.org/webui/IEI-Activities.aspx#RnD-Initiative>) before filling up the application.

Members in the News

Volume 9 | Issue 2 | February 2024



Er Syam Kumar Dullapalli, FIE

Superintending Engineer (R&B)

Designs and Planning Wing, Roads & Buildings Department, Government of Telangana, Office of the Engineer-in-Chief, Errum Manzil, Hyderabad

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Er Syam Kumar Dullapalli obtained the award of “**Outstanding Concrete Engineer**” for his outstanding contributions and dedication in the field of concrete construction on the eve of **Indian Concrete Institute Awards 2023 Hyderabad Centre** on 22 December 2023.



Dr Raj Kumar Arya, MIE

Associate Professor

Department of Chemical Engineering, Dr B R Ambedkar National Institute of Technology, Jalandhar, Punjab

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Dr Raj Kumar Arya received the **DST–SERB Core Research Grant** on “**Synthesis and Drying Studies of Antimicrobial Polymeric Coatings: Simulation & Experimental Studies**” on 10 January 2024.

Announcement

Know-Your-Member (KYM)

The Institution of Engineers (India) is **updating the database of all its Corporate Members** along with their achievements for which a Know-Your-Member (KYM) form has been introduced.

Every Corporate Member is requested to kindly fill up the form and forward it along with the self-attested copy of photo ID proof to the address given below:-

The Director (Membership)

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

Email: datamemb@ieindia.org

The form can be accessed & downloaded at :

Publication by Members

Volume 9 | Issue 2 | February 2024



Dr Kudiyarasan Swamynathan, FIE & Certified Professional Engineers, IEI
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Title of Paper: An Extension of Cancer Immunotherapy with Dostarlimab, the PD1-PD L1 Pathway Blocker

Heliyon, Elsevier Publication, 9(12), 2023, ISSN 2405-8440

DOI: <https://doi.org/10.1016/j.heliyon.2023.e23169>

Co-authors: Sitangshu Sekhar Biswas, Sarath Babu V, Abhipsa Chakraborty, Amarnath Chakraborty & Hasheetha Jayashankar

Abstract: Cancer immunotherapy is a treatment that uses the body's own immune system to fight against cancer. Malignant cells in the human body have the ability to mutate themselves in such a way that they can escape from immune system surveillance and proliferate. So, if the human immune system could be boosted or its surveillance and defensive mechanisms improved so that our bodies can detect cancer cells and kill them by combining all of the human body's defensive mechanisms, it would be much easier to deal with cancer. A recent trial at Memorial Sloan Kettering Cancer Center in New York found that by using a drug called Dostarlimab, rectal adenocarcinoma could be cured by boosting the human immune system to detect and kill cancer cells. This could be considered a validated extension of cancer immunotherapy. This paper will explain how dostarlimab works on the body's immune system and destroys cancer cells in a simple way that anyone who is not in the medical field also can understand.

Keywords: Cancer Immunotherapy; Monoclonal Antibody; PD1PDL1; Dostarlimab; B7.1



Dr Srinivasa Rao Pundru, FIE
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Title of Paper: Workspace Analysis of Calibrated Multi-position Synthesized 3-Prismatic-Revolute-Spherical Manipulator

Journal of The Institution of Engineers (India): Series C, Springer, 2024, ISSN (online): 2250-0553

DOI: <https://doi.org/10.1007/s40032-023-01017-9>

Abstract: This paper presents the workspace analysis of calibrated multi-position synthesized 3-prismatic-revolute-spherical (3-PRS) manipulator. The synthesis and workspace analysis of a multi-position manipulator are carried out by least square and Renka Cline gridding approaches. The position parameters such as position, orientation, direction, location of revolute-spherical joints are designed based on loop techniques. Based on manipulator constraints, the position parameters are synthesized and calibrated by comparing prescribed and obtained positions of revolute and spherical joints. The results are in close agreement with the positions of the 3-PRS manipulator. This work is used to obtain tip-tilt-position of the manipulator and is suitable in surgical, telescopic and space applications.

Keywords: Workspace; Calibration; Spherical Constraint; Revolute Constraint; Multi-Position



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Title of Paper: Gum Arabic Tree Biomass Derived Activated Carbon for Fluoride Sequestration in Batch and Fixed Bed Processes: Kinetics, Thermodynamics and Column Adsorption Modeling

Journal of Dispersion Science and Technology, Taylor & Francis, 2024, Print ISSN: 0193-2691 Online ISSN: 1532-2351

DOI: <https://doi.org/10.1080/01932691.2023.2296597>

Co-authors: Abideen Idowu Adeogun, Chandrashekhara Basayya Shivayogimath & Abudukeremu Kadier

Abstract: The biomass obtained from the stem of Gum Arabic tree was used to prepare a thermally activated carbon through pyrolysis at 800 °C. The activated carbon tagged GAAC-800 was used as adsorbent for the fluoride sequestration in a batch and a fixed-bed reactor in a continuous column systems. The surface morphology, elemental composition as well as particle size distribution of the adsorbent was investigated with Scanning Electron Microscopy (SEM), Elemental and Particle Size Analyzers. Also, the influence of initial fluoride concentrations, column packing height and the flow rate on the column efficiency were examined while the efficiency of batch process as a function of contact time and temperature was also investigated. It was found that the kinetic of the process was best fitted with second order model, while the mechanism was best explained by interparticle diffusion model. In addition, the Langmuir Isotherm model showed that the maximum monolayer adsorption capacity of fluoride removal was 71.93 mg/g. The breakthrough curve from the fixed bed adsorption data were well modeled by Adams-Bohart, Yoon-Nelson and Clark model. The models were judged using Akaike Information Criteria (AIC) values after statistical evaluation. GAAC-800 removed fluoride from aqueous solution comparably higher than other adsorbent in its category in batch and continuous column systems.

Keywords: Gum Arabic; Activated Carbon (AC); Fluoride Sequestration; Kinetic; Isotherm; Breakthrough Curve



Dr Somnath Mahato, MIE

Project Scientist III

Meteorological Training Institute, Indian Meteorological Department (IMD), Government of India, Dr Homi Bhabha Road, Pashan, Pune, Maharashtra

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Title of Paper: NavIC Positioning from the Secondary Service Region and Beyond: A Study using Compact NavIC Modules

Proceedings of the National Academy of Sciences, India Section A: Physical Sciences, 93(4), 2023, pp 565–572, Electronic ISSN: 2250-1762, Print ISSN: 0369-8203

DOI: <https://doi.org/10.1007/s40010-023-00825-z>

Co-authors: Atanu Santra, Surajit Kundu & Anindya Bose

Abstract: NavIC is a regional navigation system developed by India; NavIC signal is available in the central/primary service area covering the Indian landmass and 1500 km around India, and for the areas falling in the extended/secondary service region lying between latitude 30° S to 50° N and longitude 30° E to 130° E. Advantages and quality of NavIC-based position solution has been reported for the secondary service area based on simulated data. In this manuscript, real-time NMEA data are collected from NSSTC, Al Ain, UAE, NIMT, PathumThani, Thailand, falling within the extended/secondary service region and from TUMSAT, Tokyo, Japan, situated just outside the extended service region using compact, low-cost NavIC modules. Spread of the position solution in 2-dimension, and its correspondence with rank defect satellite geometry is presented. The precision of solution and North-East-Up error plots are also estimated for those locations. Real-time data from the locations points towards the advantage of having NavIC satellites placed in GEO or IGSO from high elevation angles have been discussed towards seamless navigation operation in GNSS + NavIC hybrid operation within the constrained or degraded GNSS satellite visibility situations.

Publication by Members

Volume 9 | Issue 2 | February 2024



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Title of Paper: Application of Decision-Making Algorithms in the Landfill Site Selection

Environmental Engineering and Management Journal, 22(9), September 2023, pp 1547-1556, ISSN:1582-9596

DOI: <http://doi.org/10.30638/eemj.2023.130>

Co-authors: Godwin S Barnabas, Arun Vasantha Geethan, M K V Karthikeyan & Chrispin M Das

Abstract: Solid Waste Management (SWM) has become increasingly intricate in developing countries as compared to developed nations. Composting, incineration, and recycling are commonly employed for solid waste treatment and disposal. However, these methods pose economic challenges, especially in developing countries. Among the available options, land filling emerges as the most cost effective method for solid waste disposal. However, selecting a suitable landfill site is a complex undertaking. This complexity is addressed by applying Multi-criteria Decision-Making (MCDM) tools, which aid in identifying appropriate sites. Nevertheless, it is imperative to implement measures to minimize environmental impact when selecting a suitable site. This research delves into applying distinct decision-making algorithms to determine the optimal landfill site for solid waste disposal. Various criteria or factors are considered in the site selection process, including legal, economic, environmental, social, and monitoring quality impacts. The study further explores the significance and limitations of MCDM tools in real-time case studies, providing insights into the challenges and opportunities associated with identifying suitable landfill sites for solid waste disposal.

Keywords: Comparison, Enrichment, Multi-Criteria, Preference, Priority, Technique



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Title of Paper: Review of Feedback Analysis of Business Process Outsourcing

Migration Letters, 20(-S13), 2023, pp 348-352, ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

DOI: <https://doi.org/10.59670/ml.v20iS13.6465>

Co-authors: TA Mohanaprakash, V Vivekanandhan, & M Shenbagam

Abstract: Nowadays, online users place a high value on providing feedback in order to enhance their requirements. To extract the requirements from user reviews, a variety of feedback analysis methods were proposed by numerous researchers. However, there is a typical supposition that physically breaking down huge measure of client surveys is testing task and no benchmark has set in execution of client criticism examination. This paper says regarding various clients 'criticism which they have given through web-based in different business areas. We can carry out the criticism examination in both physically and in robotized way. With our audit on criticism examination, we can say not many strategies is generally appropriate for clients to give online input accurately. We have utilized a wide range of NLP Procedures to break down the web-based clients input in different areas like

lodgings, cars, staple, clothing, and so on. We conducted a survey to get feedback from users and looked at the different strategies they used in different areas. That paves the way for us to determine which approach is the most effective.

Keywords: Reviews, Feedback Systems, Business Processing, Analysis



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Title of Paper: Ranking Influential Nodes in Complex Network using Edge Weight Degree based Shell Decomposition

Journal of Computational Science, 74, 2023, ISSN: 1877-7503

DOI: <https://doi.org/10.1016/j.jocs.2023.102179>

Co-author: Soumya Sen

Abstract: Identifying critical nodes in a complex network or ranking the nodes based on their influence over the network has many utilities. As an example, these come in handy while choosing customers for viral marketing of a new product or identifying users whom to block for preventing the spreading of misinformation/rumor among others. With proper network modeling, a large number of real-world problems could be analyzed using such node ranking methods. Ranking the nodes based on their spreading influence in a complex network is an important research problem. Network topology-based techniques play a significant role in various applications that require knowing the central entities in a modeled system. Classical network centralities like degree, betweenness, and closeness followed by core decomposition techniques are applied successfully in ranking nodes. Each of them having certain limitations like purely local measure or computation heavy etc. Due to the inherent nature of the real-world problems/events, when they are modeled as a network, most of them transform into a weighted network. Even then a large number of literature is focused on unweighted networks due to the simplicity of computations and evaluation metrics. Many node ranking methods developed for unweighted networks may be employed to weighted networks but they will not be utilize the extra information available as connection strengths. Recently, many authors have started to extend the node ranking heuristics for the weighted networks. In this paper, we propose an edge weight degree neighborhood (EwDN) based shell decomposition technique to rank the nodes of a weighted network. It considers both node degree and edge weight with a proper balance of importance. The SIR epidemic model has been used as a benchmark for simulating the spreading process. The number of generated shells, number of core-shell nodes, and monotonicity have been computed as performance metrics during the evaluation of the methods. Also, Kendall's rank correlation with the benchmark SIR model for various competing heuristics is compared. A performance comparison with recent relevant methods shows a better outcome with the proposed method on real-world weighted networks.

Keywords: Node Ranking, EwDN, Influence Maximization, Weighted Complex Networks

Announcement

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2. Have accumulated five years or more of professional experience.
3. Be a member of a recognized professional engineering institution or association.
4. Maintain a satisfactory level of Continued Professional Development (CPD).

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3. Have a minimum of two years of professional experience in a significant engineering activity.
4. Be a member of a recognized professional engineering institution or association.
5. Maintain a satisfactory level of Continued Professional Development (CPD).

Please visit the following link:

https://www.ieindia.org/webui/IEI_IntPE_Certification.aspx

The eligible candidate can submit application in the prescribed format to: The PE Cell, The Institution of Engineers (India), 8 Gokhale Road, Kolkata 70020
For any query and assistance, please send email to: pe@ieindia.org

Published Articles in IEI Journals

Volume 9 | Issue 2 | February 2024



Journal of The Institution of Engineers (India): Series A

|Agriculture, Architecture, Civil & Environmental Engineering|

(Electronic ISSN: 2250-2157; Print ISSN: 2250-2149)

[CiteScore: 2.1; h5 Index: 17]

[SCOPUS Indexed & UGC-CARE (India) listed]

For download, use Membership ID through: www.ieindia.org

Volume 104, Issue 4, December 2023

Title: **An Experimental Study on the Mechanical and Thermal Behaviour of Composite Concrete Based Hammam**

Authors: **Muhammad Dilawar Bhat, Zulqurnain Paul, Shakeel Ahmad Rather & Mujeeb UI Rehman**
Department of Civil Engineering, Islamic University of Science and Technology, Awantipora, Jammu & Kashmir, India

DOI: <https://doi.org/10.1007/s40030-023-00755-4>

Publication date: 29 August 2023

Pages: 779–789

Title: **Application of Factor Analysis and Structure Equation Modelling for Evaluation of Key Performance Indicators for Development of Sustainable Transportation Infrastructure**

Authors: **Kumkum Bhattacharya, Debasis Sarkar & Shobhit Chaturvedi**
Department of Civil Engineering, School of Technology, Pandit Deendayal Energy University, Gandhinagar, India

DOI: <https://doi.org/10.1007/s40030-023-00761-6>

Publication date: 29 September 2023

Page: 791–806

Title: **Conservation Strategies for the Traditional Water Systems: A Case of Almora City, Uttarakhand**

Authors: **Sanjay Bhandari & Harsimran Kaur**
School of Planning and Architecture, Vijayawada, India
Department of Architecture, Planning and Design, Indian Institute of Technology (BHU) Varanasi, India

DOI: <https://doi.org/10.1007/s40030-023-00759-0>

Publication date: 27 September 2023

Page: 807–817

Title: **Effect of Throttle Position and Gear Selection on Specific Energy Requirement and Power Utilization Efficiency of a Tractor Drawn Rotavator in Sandy Clay Loam Soil**

Authors: **Anshu Kumari & Hifjir Raheman**
Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, India

DOI: <https://doi.org/10.1007/s40030-023-00765-2>

Publication date: 25 October 2023

Pages: 819–829

Title: **Environmental Isotopes of Water as Potential Tool to Distinguish the Sources of Groundwater Recharge in a Semi-arid Region: A Case Study Around Veeranam Tank, Tamil Nadu, India**

Authors: **S Mahenthiran, Madhavi Ganesan & A Shahul Hameed**
Department of Environmental and Water Resources Engineering, School of Civil Engineering, Vellore

Published Articles in IET Journals

Volume 9 | Issue 2 | February 2024

Institute of Technology, Vellore, Tamil Nadu, India
Centre for Water Resources, Anna University, Chennai, India
Isotope Hydrology Division, Centre for Water Resources Development and Management, Calicut, India
DOI: <https://doi.org/10.1007/s40030-023-00767-0>

Publication date: 29 October 2023
Pages: 831–839

Title: **Estimations of Wind-Generated Effects on a Regular Tower of Varying Cross-Sectional Shape**
Authors: **Abhishek Prakash Paswan, Bhagya Jayant, Ark Rukhaiyar, Kunal Dahiya, Ritu Raj & Rahul Kumar Meena**

Department of Civil Engineering, Delhi Technological University, New Delhi, India
Department of Civil Engineering, Punjab Engineering College, Chandigarh, India

DOI: <https://doi.org/10.1007/s40030-023-00740-x>
Publication date: 20 May 2023
Pages: 841–854

Title: **Exploring the Dynamics in the Travel Decisions: A Panel Data Analysis of Trip Chaining and Mode Choice in Hyderabad, India**

Authors: **S Padma Tejaswi & C S R K Prasad**

Department of Civil Engineering, National Institute of Technology, Warangal, India

DOI: <https://doi.org/10.1007/s40030-023-00757-2>
Publication date: 21 September 2023
Pages: 855–866

Title: **Failure Investigation of Transmission Line Towers with Unfilled Bolt Holes in Stub Member**

Authors: **R Balagopal, N Prasad Rao, G S Palani & R P Rokade**

CSIR- Structural Engineering Research Centre, Chennai, India

DOI: <https://doi.org/10.1007/s40030-023-00766-1>
Publication date: 18 October 2023
Pages: 867–876

Title: **Identification of Groundwater Potential Recharge and Recharge Zones of Tumakuru District Using GIS**

Authors: **Suma Gubbi Ratna, Divyashree Koppa Suresh & Ravi Hanumantha**

Department of Chemical Engineering, Siddaganga Institute of Technology, Tumakur, India
Clark University, Worcester, MA, 01610, USA

DOI: <https://doi.org/10.1007/s40030-023-00762-5>
Publication date: 28 October 2023
Pages: 877–893

Title: **Integrated Cost Functions for Biological Treatment by Moving Bed Biofilm Reactor in Wastewater Treatment Plant**

Authors: **Bhaskar Sengupta & Somnath Mukherjee**

Department of Civil Engineering, Jadavpur University, Kolkata, India

DOI: <https://doi.org/10.1007/s40030-023-00751-8>
Publication date: 06 August 2023
Pages: 895–911

Title: **Production of Fresh Water and Green Energy Using Solar-Based Steam Generation**

Authors: **V Baskaran & R Saravanane**

Department of Civil Engineering, Puducherry Technological University, Puducherry, India

DOI: <https://doi.org/10.1007/s40030-023-00760-7>

Published Articles in IET Journals

Volume 9 | Issue 2 | February 2024

Publication date: 24 September 2023

Pages: 913–925

Title: **Seismic Analysis of Steel Bracing on Composite Structure by Pushover Analysis**

Authors: **Hiran Chaudhary & Aditya Kumar Tiwary**

Department of Civil Engineering, University Institute of Engineering, Chandigarh University, Mohali, Punjab, India

University Centre for Research & Development, Chandigarh University, Mohali, Punjab, India

DOI: <https://doi.org/10.1007/s40030-023-00764-3>

Publication date: 12 October 2023

Pages: 927–941

Title: **Seismic Response Analysis of High-Rise Reinforced Concrete Buildings Using Outrigger System**

Authors: **Nima Sthapit, Rajesh Kumar Shrestha & Satish Paudel**

Institute of Engineering, Tribhuvan University, Lalitpur, Nepal

Department of Civil Engineering, Institute of Engineering, National College of Engineering, Tribhuvan University, Nepal

DOI: <https://doi.org/10.1007/s40030-023-00758-1>

Publication date: 16 September 2023

Pages: 943–952

Title: **Wind-Induced Interference Effects due to Partial Shielding of Building**

Author: **Jignesh Amin**

Civil Engineering Department, Gujarat Technological University, Ahmedabad, India

DOI: <https://doi.org/10.1007/s40030-023-00756-3>

Publication date: 12 September 2023

Pages: 953–970

Title: **Analysis of Surface Sediment at Tropical Freshwater Lake Using SONAR System with Field Validation**

Authors: **Jyoti Rangole, Supriya Mangle & Samadhan G Morkhade**

Department of Electronics and Telecommunication Engineering, VPKBIET, Maharashtra, India

Department of Electronics and Telecommunication Engineering, MKSSS, Cummins College of Engineering for Women, Pune, India

Department of Civil Engineering, VPKBIET, Maharashtra, India

DOI: <https://doi.org/10.1007/s40030-023-00752-7>

Publication date: 08 August 2023

Pages: 971–981

Title: **Estimation of Probable Maximum Flood by Flood Frequency Analysis at Tiuni Barrage Site on River Tons**

Author: **Jnan Ranjan Pal**

Irrigation Department, Government of Uttar Pradesh, Lucknow, India

DOI: <https://doi.org/10.1007/s40030-023-00754-5>

Publication date: 30 August 2023

Pages: 983–995

Title: **Soil Loss Evaluation in Kaddam Watershed Using Geographical Information Systems and Remote Sensing Techniques**

Authors: **Kodimela Anil, S Sivaprakasam & PSridhar**

Civil Engineering Department, Annamalai University, Chidambaram, India

Civil Engineering Department, Shri Vishnu Engineering College for Women, Bhimavaram, India

DOI: <https://doi.org/10.1007/s40030-023-00753-6>

Published Articles in IET Journals

Volume 9 | Issue 2 | February 2024

Publication date: 29 August 2023

Pages: 997–1003

Title: **Multimodal Urban Transportation System for Medium Size Cities**

Authors: **Nekzad Umrigar & Jayeshkumar Ramchandrabhai Pitroda**

Gujarat Technological University, Ahmedabad, India

Birla Vishvakarma Mahavidyalaya (Engineering College), Vallabh Vidyanagar, India

DOI: <https://doi.org/10.1007/s40030-023-00763-4>

Publication date: 06 October 2023

Pages: 1005–1021



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[CiteScore: 2.2; h5 Index: 19]

[SCOPUS Indexed & UGC-CARE (India) listed]

For download, use Membership ID through: www.ieindia.org

Volume 104, Issue 5, October 2023

Title: **A High-Q Floating Active Inductor Based VCO for L-Band and Lower C-Band Applications in 180 nm CMOS Technology**

Authors: **Aditya Kumar Hota, Kabiraj Sethi, Kriangkrai Sooksood & Sushanta Kumar Mohapatra**

Department of Electronics and Telecommunication Engineering, Veer Surendra Sai University of Technology, Burla, Odisha, India

Department of Electronics Engineering, School of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, 10520, Thailand

School of Electronics Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar, India

DOI: <https://doi.org/10.1007/s40031-023-00910-2>

Publication date: 08 August 2023

Pages: 1023–1033

Title: **Bidirectional Position Control of a Prismatic joint for Motorized Single Link Robotic Arm Using Adaptive Super-Twisting Sliding Mode Control**

Authors: **G Then Mozhi, M Banu Sundareswari & K Dhanalakshmi**

Department of Instrumentation and Control Engineering, National Institute of Technology, Tiruchirappalli, India

DOI: <https://doi.org/10.1007/s40031-023-00908-w>

Publication date: 09 August 2023

Page: 1035–1042

Title: **Detection of Plant Leaf Disease by Generative Adversarial and Deep Convolutional Neural Network**

Published Articles in IET Journals

Volume 9 | Issue 2 | February 2024

- Authors: **Rashmi Deshpande & Hemant Patidar**
Department of Electronics and Communication Engineering, Oriental University, Indore, India
DOI: <https://doi.org/10.1007/s40031-023-00907-x>
Publication date: 07 July 2023
Page: 1043–1052
- Title: **English Handwritten Character Recognition Based on Ensembled Machine Learning**
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Authors: **Sunita Rani & Jagtar Singh Sivia**

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Fabrication and Characterization of Silicon Carbide and Graphite Reinforced Aluminium Matrix Composite

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- Title: **Influence of SiC Reinforcement on AA6061 Alloy Composite Prepared by Gravity Die Casting**
Authors: **Anand Tiwari & Mayank Agarwal**
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- Title: **Influence of Silicon Carbide Particulates on Vibrational Characteristics for Al 7075 Composites**
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- Title: **Investigation on Slurry Erosive Wear Behaviour of HVOF-Sprayed Al₂O₃-CeO₂ Coatings on AZ91 Alloy**
Authors: **Kaushik V. Prasad, Adarsha Hiriyannaiah & R Keshavamurthy**
Department of Mechanical Engineering, JAIN University, Bangalore, India
Department of Mechanical Engineering, Dayananda Sagar College of Engineering, Bangalore, India
DOI: <https://doi.org/10.1007/s40033-022-00421-2>
Publication date: 30 December 2022
Pages: 661–675
- Title: **Maximum Aerobic Capacity and Relative Aerobic Strain among Mobile Mine Equipment Operators in Underground Mines**
Authors: **S Sridhar, M Govinda Raj & M Aruna**
Department of Mining Engineering, National Institute of Technology, Mangalore, India
DOI: <https://doi.org/10.1007/s40033-022-00433-y>
Publication date: 28 December 2022
Pages: 677–688
- Title: **Microstructure and Tribo-corrosion Behavior of Stainless Steel-304 Cladding with the Mixture of Nickel and Chromium Carbide by Microwave Energy**
Author: **Shashi Prakash Dwivedi**
G L Bajaj Institute of Technology and Management, Greater Noida, India
DOI: <https://doi.org/10.1007/s40033-022-00439-6>
Publication date: 11 January 2023
Pages: 689–697
- Title: **Modelling of Shallow Drawing of Aluminium Alloy AA2014 Thin Sheet Using FE Simulations**
Authors: **G Narender, E Ramjee, Perumalla Janaki Ramulu & N Eswara Prasad**

Department of Mechanical Engineering, Vignan Institute of Technology and Science, Hyderabad, India
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DOI: <https://doi.org/10.1007/s40033-022-00419-w>

Publication date: 09 November 2022

Pages: 699–704

Title: **On Titanium Powder Mixed Electric Discharge Machining of Nimonic C-263**

Authors: **Prasan Ralph Dewan & Pranab Kumar Kundu**

Mechanical Engineering Department, National Institute of Technology, Sikkim, India

Mechanical Engineering Department, National Institute of Technology, Prayagraj, Uttar Pradesh, India

DOI: <https://doi.org/10.1007/s40033-022-00427-w>

Publication date: 11 December 2022

Pages: 705–712

Title: **Optimization of Process Parameters in the Synthesis of TiO₂ Nanoparticle Catalyst to Produce Hydrocarbon Oil Using the Catalytic Pyrolysis Process**

Authors: **S Ramasamy & R B Anand**

Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli, India

DOI: <https://doi.org/10.1007/s40033-022-00431-0>

Publication date: 30 December 2022

Pages: 713–721

Title: **Optimization of Wear Parameters on Friction Stir Welded Dissimilar Aluminium Joints**

Authors: **M Madhusudan, S P Shanmuganatan & Shridhar Kurse**

Department of Mechanical Engineering, Dayananda Sagar College of Engineering, Bengaluru, India

Department of Automobile Engineering, New Horizon College of Engineering, Bengaluru, India

DOI: <https://doi.org/10.1007/s40033-022-00412-3>

Publication date: 10 October 2022

Pages: 723–738

Title: **Piezo-beam Structure in a Pipe with Turbulent Flow as Energy Harvester: Mathematical Modeling and Simulation**

Authors: **Mohit Yadav, Surendra Kumar, Ashish Kaushik & Deepak Chhabra**

Department of Applied Sciences, University Institute of Engineering and Technology, M.D.University, Rohtak, Haryana, India

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DOI: <https://doi.org/10.1007/s40033-022-00440-z>

Publication date: 29 December 2022

Pages: 739–752

Title: **Progressive Damage Analysis of Random Oriented Chopped Glass Fiber-Reinforced Laminate Under Three-Point Bending Test**

Authors: **Pankaj Chaupal & Deepak Kumar**

Department of Mechanical Engineering, National Institute of Technology, Jamshedpur, India

DOI: <https://doi.org/10.1007/s40033-022-00410-5>

Publication date: 29 November 2022

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- Title: **Qualitative Damage Assessment of Laser Contact Opening and Microstructural Evolution at the Rear Contact of a Perc Mono Crystalline Si Solar Cell upon Co-Firing with Si Doped Al Paste**
Authors: **Devdutt Singh, Himadri Agrawal, Bharat K. Pant & Priyanka Kamari**
Amorphous Silicon Solar Cell Plant, Bharat Heavy Electricals Limited, New Delhi, India
DOI: <https://doi.org/10.1007/s40033-022-00418-x>
Publication date: 14 November 2022
Pages: 767–776
- Title: **Stochastic Study of Random-Ballistic Competitive Growth Model in 2+1 Dimension and Related Scaling Exponents**
Authors: **S K Das, D Banerjee & J N Roy**
Department of Physics, Durgapur Government College, Durgapur, India
Faculty of Engineering and Computing Sciences, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India
Department of Physics, Kazi Nazrul University, Asansol, West Bengal, India
DOI: <https://doi.org/10.1007/s40033-022-00408-z>
Publication date: 13 October 2022
Pages: 777–784
- Title: **Study on Effect of Gouge Depth on the Microstructure and Tensile Properties of 18%Ni Maraging Steel Welds Made Through Hot Wire GTA Welding**
Authors: **Chidanand Magadum, Rohit Kumar Gupta, P Senthil, M Manohar & S Biju**
Department of Production Engineering, National Institute of Technology, Tiruchirappalli, India
Materials and Mechanical Entity, Vikram Sarabhai Space Centre, Thiruvananthapuram, India
DOI: <https://doi.org/10.1007/s40033-022-00430-1>
Publication date: 06 December 2022
Pages: 785–794
- Title: **Synthesis and Characteristics of Heat Treated Al6061-Zirconium Dioxide Metal Matrix Composites**
Authors: **R Vijayakumar, K C Anantha Padmanabham, G L Chandrasekhar, Roopa R Navalli, Manjunatha, T Hemanth Raju & S Udayashankar**
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DOI: <https://doi.org/10.1007/s40033-022-00435-w>
Publication date: 02 January 2023
Pages: 795–804
- Title: **Synthesis of Alumina Sol Binder for Pure Alumina Refractory Castable and its Comparison with Other Commercially Available Binders**
Authors: **Pawan Rangdal & Sharanabasappa B Patil**
Department of Ceramic and Cement Technology, PDA College of Engineering, Kalaburgi, Karnataka, India
DOI: <https://doi.org/10.1007/s40033-022-00420-3>
Publication date: 14 November 2022
Pages: 805–809

Title: **Taguchi Analysis of the Deformation Characteristics of Single-Point Cutting Tool with Micro-Tool Coatings During Orthogonal Machining**

Authors: **Anand Pai, Satish Shenoy Baloor & Chandrakant R Kini**

Department of Aeronautical and Automobile Engineering, Manipal Institute of Technology, Manipal, India

DOI: <https://doi.org/10.1007/s40033-022-00437-8>

Publication date: 30 December 2022

Pages: 811–820

Title: **Critical Analysis of Powder Factor in Dragline Bench Blasting: A Case Study**

Author: **Vikram Seervi**

Department of Mining Engineering, IIT (BHU), Varanasi, India

DOI: <https://doi.org/10.1007/s40033-022-00416-z>

Publication date: 28 October 2022

Pages: 821–830

Title: **A Review on High-Velocity Oxy-Fuel (HVOF) Coating Technique**

Authors: **Kalluri Anusha, Bharat Chandra Routara & Spandan Guha**

Department of Mechanical Engineering, Raghu Institute of Technology, Visakhapatnam, India

School of Mechanical Engineering, Kalinga Institute of Industrial Technology, Bhubaneswar, India

DOI: <https://doi.org/10.1007/s40033-022-00434-x>

Publication date: 02 January 2023

Pages: 831–848

Title: **Applications and Challenges of 3D Printed Polymer Composites in the Emerging Domain of Automotive and Aerospace: A Converged Review**

Authors: **Pradeep Kumar Mishra & T Jagadesh**

Department of Production Engineering, National Institute of Technology, Tiruchirappalli, India

DOI: <https://doi.org/10.1007/s40033-022-00426-x>

Publication date: 29 December 2022

Pages: 849–866

Title: **Exploiting Machine Learning in Multiscale Modelling of Materials**

Authors: **G Anand, Swarnava Ghosh, Liwei Zhang, Angesh Anupam, Colin L Freeman, Christoph Ortner, Markus Eisenbach & James R Kermode**

Department of Metallurgy and Materials Engineering, Indian Institute of Engineering Science and Technology, Shibpur, Howrah, India

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DOI: <https://doi.org/10.1007/s40033-022-00424-z>

Publication date: 28 November 2022

Pages: 867–877

Title: **Modeling and Simulation of Brake Disc Using Lightweight Materials**

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Authors: **Tanishq Bheda, Dhrupad Joshi, P K Dinesh Kumar & S Darius Gnanaraj**
School of Mechanical Engineering, Vellore Institute of Technology, Vellore, India
DOI: <https://doi.org/10.1007/s40033-022-00425-y>
Publication date: 01 December 2022
Pages: 879–885

Title: **Simulation of Temperature Distribution in a Brake Pad Ceramic Composite Material**
Authors: **Praveenkumar Babu & Darius Gnanaraj Solomon**
School of Mechanical Engineering (SMEC), Vellore Institute of Technology, Vellore, India
DOI: <https://doi.org/10.1007/s40033-022-00443-w>
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Title: **Biohydrogen Production from Acid Hydrolysis Wastewaters Using Artificial Photo-Assisted Microbial Electrolysis Cell**
Authors: **K Keruthiga, N Samsudeen, N Nagendra Gandhi & K Muthukumar**
Department of Chemical Engineering, Alagappa College of Technology, Anna University, Chennai, India
Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli, India
DOI: <https://doi.org/10.1007/s40034-023-00276-6>
Publication date: 23 October 2023
Pages: 195–200

Title: **Design and Fabrication of an Instrument for Splitted Jute Fiber Length Measurement**
Authors: **Md. Redwanul Islam, Hosne Ara Begum, Md Sharif Ahmed, H M Zakir Hossain & Fahmida-E-Karim**
Department of Textile Engineering, Ahsanullah University of Science and Technology (AUST), Dhaka, Bangladesh
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Department of Textile Engineering, BGMEA University of Fashion and Technology (BUFT), Dhaka, Bangladesh
DOI: <https://doi.org/10.1007/s40034-023-00277-5>
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Page: 201–214

- Title: **Electrochemical Treatment of Dye Wastewater in a Filter Press Type Electrochemical Reactor**
Authors: **Ashvini More, V S Neeraj & K Muthukumar**
Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli, India
DOI: <https://doi.org/10.1007/s40034-023-00270-y>
Publication date: 16 June 2023
Page: 215–221
- Title: **Intimation of Gravitational Body Forces in Magnetized Transport of Bio-Nanofluid Flow with Bioconvection and Variable Viscosity**
Authors: **Muhammad Jawad & Muhammad Sajid**
Faculty of Sciences, The Superior University, Lahore, Pakistan
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Institute of Microscale Optoelectronics, Optical Engineering, Shenzhen university, Shenzhen, China
DOI: <https://doi.org/10.1007/s40034-023-00280-w>
Publication date: 10 December 2023
Pages: 223–235
- Title: **Optimization of Enzyme-Assisted Ultrasonic Irradiation Silk Degumming Process**
Authors: **Saurabh Rawan, Sangyong Zhang, Atul Dhavale, Manjunath C Burji & Umesh Kore**
Wuhan Textile University, Wuhan, China
D K T E Society's Textile and Engineering Institute, Ichalkaranji, Maharashtra, India
DOI: <https://doi.org/10.1007/s40034-023-00275-7>
Publication date: 01 September 2023
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- Title: **Statistical Modelling of Solar Photocatalytic Biodegradability of Seawater Using Combined Photocatalysts**
Authors: **Nayeemuddin Mohammed, Puganeshwary Palaniandy, Feroz Shaik & Hiren Mewada**
School of Civil Engineering, Universiti Sains Malaysia, Penang, Malaysia
Prince Mohammad Bin Fahd University, Al Khobar, Kingdom of Saudi Arabia
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Publication date: 01 September 2023
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- Title: **Sustainable Synthesis of Polyols Derived via In Situ Epoxidation Peracid Mechanism**
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Chemical Engineering Studies, College of Engineering, Universiti Teknologi MARA, Masai, Malaysia
DOI: <https://doi.org/10.1007/s40034-023-00279-3>
Publication date: 16 December 2023
Pages: 269–274
- Title: **Synthesis and Characterization of V2O5 Supported on TiO2 Selective Catalytic Reduction (SCR) Catalyst for De-NOX Application**
Authors: **S P Manjunath, J R Pooja, C D Madhusoodana, G Thirupathi & Prakash Binnal**
Department of Chemical Engineering, Siddaganga Institute of Technology, Tumakuru, Karnataka, India
Ceramic Technological Institute, Bharat Heavy Electricals Ltd., Bangalore, India
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Publication date: 17 June 2023
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- Title: **The Effect of A Corrosion Inhibitor on Aqueous Di Ethanol Amine Solution Piping Behaviour in Carbon Steel**
Authors: **Nady S Abbas, Mohammed Z A Wahhab, Eman A Ashour, Taha I Farrag & Lamiaa A Mohammed**
Process Engineering and Corrosion Mitigation Department Head, Gulf of Suez Petroleum Company (GUPCO), Beny suef, Egypt
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Chemical Engineering Department, Faculty of Engineering, Beni Suef University, Beni Suef, Egypt
DOI: <https://doi.org/10.1007/s40034-023-00278-4>
Publication date: 11 December 2023
Pages: 285–296
- Title: **The Preparation of Nanoemulsion Formulation from Pelargonic Acid in Lignin Carrier and Its Application to Weeds**
Authors: **Witta Kartika Restu, Melati Septiyanti, Evi Triwulandari, Nurhani Aryana, Yulianti Sampora, Yenni Apriliani Devy, Muhammad Ghozali, Muryanto, Yenny Meliana, Dewi Sondari, Widya Fatriasari & Chiaki Ogino**
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DOI: <https://doi.org/10.1007/s40034-023-00272-w>
Publication date: 12 July 2023
Pages: 297–303
- Title: **Rejuvenating the Textile Engineering Education in Indian and South-Asian Universities**
Author: **Abhijit Majumdar**
Department of Textile and Fibre Engineering, Indian Institute of Technology Delhi, New Delhi, India
DOI: <https://doi.org/10.1007/s40034-023-00273-9>
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1.	Metal Additive Manufacturing and its Applications	04 - 07 Mar 24
2.	Preparation of DPR and Tender Documents for Sewage Treatment Plant.	04 - 06 Mar 24
3.	Web Development using Python & React JS	04 - 08 Mar 24
4.	Planning, Design, Construction and O&M of Lift Irrigation Schemes	04 - 07 Mar 24
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6.	Supply Chain Analytics	06 - 08 Mar 24
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8.	Solar Energy Storage Battery Maintenance and Related Issues (Online)	06 - 08 Mar 24
9.	Total Productive Maintenance	11 - 14 Mar 24
10.	Current Environment legislation and Regulations	13 - 15 Mar 24
11.	Power Plant Chemistry for Chemists and Operation Engineers	13 - 15 Mar 24
12.	Improving Leadership, Managerial and Administrative Skills at Alley	13 - 15 Mar 24
13.	Laboratory Management System Awareness & Internal Auditing (As per ISO / IEC 17025 : 2017 & NABL Requirements)	18 - 21 Mar 24
14.	Automation in Micro Irrigation Systems for improving Irrigation Efficiency	18 - 22 Mar 24
15.	Industrial Decarbonization in India	19 - 20 Mar 24
16.	Tariff Policy - Basics of Tariff Calculation & Procedure / Information Required for Preparation of Tariff Petition (ARR) & Energy Scheduling	20 - 22 Mar 24
17.	Advanced Earthquake Resistant Techniques of Building	25 - 29 Mar 24
18.	Advanced Industrial Automation and Robotics for Engineers and Scientists	25 - 27 Mar 24
19.	Best Practices in O&M of Coal & Ash handling plants	26 - 29 Mar 24
20.	Training on Corporate Social Responsibility at Manali	26 - 28 Mar 24
21.	City Water Action Planning	27 - 29 Mar 24
22.	TQM Practices and Tools for Organizational Excellence	27 - 29 Mar 24