

2023 7th International Conference on Computer Applications in Electrical Engineering-Recent Advances (CERA 2023)

**Roorkee, India
27-29 October 2023**



**IEEE Catalog Number: CFP23K08-POD
ISBN: 979-8-3503-0501-2**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23K08-POD
ISBN (Print-On-Demand):	979-8-3503-0501-2
ISBN (Online):	979-8-3503-0500-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Paper ID	Paper Title	Authors	Page No.
22	Partial repowering analysis of wind farm to mitigate wake loss	Aswin Anil Bindu (Amrita Vishwa Vidyapeetham)*; K.C. Sindhu Thampatty (Amrita Vishwa Vidyapeetham)	1
23	Design and control of a robotic hand for generating gestures based on American Sign Language	YASH VERMA (Indian Institute of Technology Roorkee)*; Radhey Shyam Anand (IIT Roorkee)	7
28	Investigating the performance of Internet of Things in a Traditional Anodizing Industry for improved Quality and Delivery of Products using Response Surface Methodology	VINODH KUMAR P (COIMBATORE INSTITUTE OF TECHNOLOGY)*; Manavaalan Gunasekaran (Coimbatore Institute of Technology); Manikandan V (Coimbatore Institute of Technology); Elango S (COIMBATORE INSTITUTE OF TECHNOLOGY)	13
35	SOLAR POWERED UNMANNED AERIAL VEHICLE	K.C. Sindhu Thampatty (Amrita Vishwa Vidyapeetham)*, Hima M (Amrita Vishwa Vidyapeetham)	19
42	Elevator Based Car Parking System	Priyanshu Kumar Rouniyar (Kathmandu University)*; Kusum Dhamala (Kathmandu University); Nabin Khatri (Kathmandu University); Aship Chaudhary (Kathmandu University); Sashank Shrestha (Kathmandu University); Suwarna Thapa (IOE)	25
45	Comparative Analysis of Passive, Active, and Hybrid Active Filters for Power Quality Improvement in Grid-Connected Photovoltaic System	Akash V. Barva (Department of Electrical Engineering, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat)*; Siddharth Joshi (Department of Electrical Engineering, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat)	30
54	Optimal Sizing and Operation of PV based Battery Swapping Station considering EV Uncertainties for an Indian Residential Community	Anu G Kumar (Amrita Vishwa Vidyapeetham)*; Niranjan Manoj (Amrita Vishwa Vidyapeetham); Vigneshkumar B (Amrita Vishwa Vidyapeetham); SINDHU M R (AMRITA)	36
62	A Survey of Heterogeneous Routing Protocols for Wireless Sensor Networks	SUMIT KUMAR (MMM UNIVERSITY OF TECHNOLOGY GORAKHPUR)*; JAY PRAKASH (MMM UNIVERSITY OF TECHNOLOGY GORAKHPUR)	42
63	Sine Cosine Algorithm-Based Fractional Order PID Controller for Load Frequency Control in a Single Area Nuclear Power Plant	Rishika Namdeo (Madhav Institute of Technology and Science)*; Manjaree Pandit (MITS Gwalior);Nikhil Paliwal (Madhav Institute of Technology & Science, Gwalior, MP, India)	48
70	Design of a PV based battery charger for a Solar assisted Electric Vehicle	Palkesh prajapati (National Institute of Technology Tiruchirappalli); Jose Thankachan (NIT Tiruchirappalli)*; Aditya Kumar (NIT Tiruchirappalli)	53
75	Detection of Obstacles and Intelligent Narrow Road Navigation for Autonomous Vehicles - A Hardware Approach	Udit Gavasane (National Institute of Technology Karnataka, Surathkal)*, Ananthanarayana V.S. (National Institute of Technology Karnataka, Surathkal)	59
78	Whale Optimization-based Distributed Generation Placement in Distribution System for Loss Minimization	Kamna Singh (Sardar Vallabhbhai National Institute of Technology)*; Khyati.D Mistry (Sardar vallabhbhai National Institute of Technology); Hireen Kumar G Patel (S V National Institute of Technology)	65

81	Real-Time Voltage Stability Assessment using Artificial Neural Network	Ranjana Choudhary (NIT Warangal)*; D.M Vinod Kumar (SR University)	71
83	Tunable Sparing of Disks in a Cloud Data Center	Rohit Malawat (IIT Roorkee); Shrey D Modi (California State University Long Beach)*; Rahul Vishwakarma (California State University Long Beach)	77
86	Automated Characterization in Cryocon 22C at Wide Temperature Range using LabVIEW	Jyotiska Bharadwaj (Independent Researcher)*; Filip Bogdanović (University of Zagreb); Lovro Marković (University of Zagreb)	83
87	Temporal Convolutional Network-based Locational Detection of False Data Injection Attacks in Power System State Estimation	Raghuvamsi Yarlagadda (National Institute of Technology Andhra Pradesh); V.S.N. Kalyani (NIT Andhra Pradesh); Kiran Teeparthi (National Institute of Technology, Andhra Pradesh)*; S Naga Geetha (NIT Andhra Pradesh); Y Srimannarayana (NIT Andhra Pradesh); Sreenadh Batchu (National Institute of Technology, Andhra Pradesh)	89
91	Enhancing PV Array Performance in Partial Shading Conditions: A Comparative Evaluation for MPPT	Ashish Kumar Sahu (National Institute of Technology Raipur)*; Shubhrata Gupta (NIT Raipur); Pankaj Prasad (National Institute of Technology Raipur)	95
95	Multilayer Convolutional Neural Network for Maize Leaf Disease Classification	Gaurav Pandey (NSUT)*; Rajneesh Sharma (NSUT); Amit Kukker (Symbiosis Institute of Technology, Symbiosis International (Deemed University))	101
96	Analysis of Variation in Electrode Location and frequency on Imagined Speech Task Prediction	Anand Mohan (IIT ROORKEE)*; Radhey Shyam Anand (IIT Roorkee)	106
101	Image super resolution using Enhanced Attention Block (EAB) for Grape Leaf Disease Detection	PUJARI VENKATA YESWANTH (NIT TIRUCHIRAPPALLI)*; Thanya Y (Amrita vishwa vidyapeetham); S Deivalakshmi (NIT Tiruchirappalli); Lokesh Kumar K M (Amrita Vishwa Vidyapeetham); Johaan George (Indian Institute of Technology Kharagpur)	112
114	Input Current FFT Model-derived Comprehensive Comparison of Totem-pole PFC and H-Bridge PFC Converter DM EMI Performances	Parth Rathod (Arizona State University); Naveed Ishraq (Arizona State University); AYAN MALLIK (Arizona State University)*; Ashwin V Chandwani (Arizona State University)	117
115	PERFORMANCE INVESTIGATIONS ON BI-DIRECTIONAL DC-DC CONVERTER FOR ELECTRIC VEHICLE CHARGER USING OPALRT	Ashish Singh (Harcourt Butler Technical University)*; Prakhar Agrahari (Harcourt Butler Technical University); shubhi tiwari (HBTU); YASH YADAV (HARCOURT BUTLER TECHNICAL UNIVERSITY); Sanjiv Kumar (Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India)	123
118	Protection for Turn-to-Turn Internal Fault in Shunt Reactors using Time-Domain Approach	Rabindra Mohanty (IIT Delhi)*; Ashok Kumar Pradhan (IIT Kharagpur)	129
122	Four-Phase Interleaved Bidirectional DC-DC Converter for Battery Energy Storage System	VIVEK KUMAR (National Institute of Technology Karnataka)*; Nagendrappa H (NITK Surathkal)	134
124	Power Loss Analysis of Traction Inverter for Electric 2-Wheeler application	Prathamesh Deshpande (College of Engineering Pune)*; Meera Murali (College of Engineering Pune), Kapil Kalantri (Hella Pvt. Ltd., Pune), Rohan Deshpande (Hella Pvt. Ltd., Pune)	140
125	ANFIS Based PID Control of Antilock Braking System Model	Prithish Sharma (National Institute of Technology, Kurukshetra)*; Dr. Jyoti Ohri (National Institute of Technology, Kurukshetra)	146

126	Investigation of the Effects on Power Quality of Traditional Power System Interconnected with Large Scale Renewable Energy Sources	Tanvi Upadhyay (Pandit Deendayal Energy University)*; Dr. J. G. Jamnani (PDPU)	152
130	A Floating Capacitor Cubic-Cell Boost Converter for Photovoltaic application	Anjana Saikia (Tezpur University)*; SANTANU SHARMA (Tezpur University)	157
131	An Evaluative Investigation of Deep Learning Models by Utilizing Transfer Learning and Fine-Tuning for Cervical Cancer Screening of Whole Slide Pap-Smear Images	Nitin Kumar Chauhan (Indore Institute of Science and Technology, Indore)*; KRISHNA SINGH (G.B Pant DSEU Okhala 1 campus formerly G.B. Pant Government Engineering College, New Delhi); Shravan Namdeo (Indore Institute of Science and Technology, Indore); Ankit Muley (Indore Institute of Science and Technology, Indore)	163
132	Sliding Mode and Hysteresis Controller-Based FOC of BLDC Motor for Lightweight Electric Vehicles	Shuchita Jain (Motilal Nehru National Institute of Technology)*; Majhrul Israr (MNNIT ALLAHABAD), Paulson Samuel (Motilal Nehru National Institute of Technology)	168
134	Assessing the Sustainability of Transportation Electrification in India	Anu Agarwal (Indian Institute of Technology, Roorkee)*; Tarun Sharma (Indian Institute of Technology, Roorkee)	174
143	Digital Substation Design and Architecture for Power Grid Modernization	Balakrishna Pamulaparthi (GE Grid Solutions)*, Pradeep Kumar K (GE Grid Solutions), Sai Pramod Tati (GE Grid Solutions), Aditya Saxena (GE Grid Solutions), Varun Goel (GE Grid Solutions), Prashant Gopal (GE Grid Solutions)	180
146	LANE CHANGE CONTROL OF AUTONOMOUS VEHICLE ON HIGHWAY TRAFFIC	Kusumika Krori Dutta (M S Ramaiah Institute of Technology)*; Kehkashan Jalall S (Presidency University); Sarita Kumari (Amity University); Harsha K (Nitte Meenakshi Institute of Technology)	186
149	Galaxy Shape Classification Using Machine Learning	Jyoti Bagate (VESIT)*; Raj Jadhav (Vivekanand Education Society's Institute of Technology); Nikhil Jain (Vesit); Gargi V Gaikwad (VESIT); Aaron Arimpur (VESIT), Aaronn Arimpur (VESIT)	192
152	Z-Source Inverter Fed e-Drive System for Electric Vehicle Application	NILANJAN DAS (Sardar Vallabhbhai National Institute of Technology, Surat)*; CHANDAN KUMAR THAKUR (SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY SURAT); Dr. Sukanta Halder (Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat); Dr. Rakesh Maurya (SVNIT Surat); AVISMIT DUTTA (National Institute of Technology Sikkim); Aurobinda Panda (NIT Sikkim)	198
154	Supervised Machine Learning to Identify Loss of Excitation and Power Swing in a Generator	Varnika Gulati (Malaviya National Institute of Technology, Jaipur)*; Kusum Verma (MNIT, Jaipur)	204
155	A Bidirectional DC-DC Converter for Supercapacitor Assisted EVs	Ankit Kumar Singh (NSUT Delhi)*; Anjane K Mishra (NSUT,DELHI); Gururaj M Vishwanath (Indian Institute of Technology Kanpur)	210

156	Reinforcement Learning-Based Strategic Bidding for Generation Companies in Electricity Markets	Deven Vatsal (Dr. B. R. Ambedkar National Institute of Technology)*; Kailash Chand Sharma (Dr. B. R. Ambedkar National Institute of Technology Jalandhar); sadbhav singh (Dr. B. R. Ambedkar National Institute of Technology Jalandhar)	216
157	Privacy Constrained Load Profiling using Smart Meter Data	Deven Vatsal (Dr. B. R. Ambedkar National Institute of Technology)*; Kailash Chand Sharma (Dr. B. R. Ambedkar National Institute of Technology Jalandhar); Ritika Mahajan (Dr. B. R. Ambedkar National Institute of Technology Jalandhar)	222
158	A Hybrid CDG-CSF Based Approach for Enhancing Lifetime of Wireless Sensor Network	Ghodke Kumar (Indian Institute of Technology, Roorkee); Parth Sharma (Indian Institute of Technology, Roorkee); Pyari M Pradhan (IIT Roorkee)*	228
159	Battery SOC Estimation Using Enhanced Self-Correcting Model-Based Extended Kalman Filter	Sk Bittu (Sardar Vallabhbhai National Institute of Technology Surat)*; Dr. Sukanta Halder (Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat); Sujeet Kumar (Sardar Vallabhbhai National Institute of Technology Surat); NILANJAN DAS (Sardar Vallabhbhai National Institute of Technology, Surat); Soumava Bhattacharjee (Control Engineer Vancouver, Canada); Mousam Ghosh (Ramkrishna Mahato Govt. Engineering College Purulia)	234
161	Finite Element-based Dynamic Eccentricity Fault Analysis in Switched Reluctance Motor Using Machine Learning Approach	Praveen Kumar N (Amrita Vishwa Vidyapeetham)*; Arya Asok (Amrita Vishwa Vidyapeetham)	240
162	Machine Learning Approach to Analyze Converter Fault in Switched Reluctance Motor Drive Using Finite Element Method	Praveen Kumar N (Amrita Vishwa Vidyapeetham)*; Atul Ashok Harde (Amrita Vishwa Vidyapeetham)	246
163	SiC Based 3-Phase Vienna Rectifier Using Hybrid SVPWM Strategy for EV Charging Station	Uppalapati Sudheer Kumar (Sardar Vallabhbhai National Institute of Technology Surat)*; Dr. Sukanta Halder (Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat); Sk Bittu (Sardar Vallabhbhai National Institute of Technology Surat); Soumava Bhattacharjee (Controls Engineer Vancouver, Canana); Naveen Yalla (Indian Institute of Technology (BHU)); JAYARAM NAKKA (NIT ANDHRA PRADESH)	252
169	Fair Pricing in Transactive Energy Management for Peer-to-Peer Trading: A Shapley Value Analysis Using Game theory	SWATI SHARMA (MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR)*; Prerna Jain (MNIT Jaipur); Anant Sant (Idam Infrastructure Advisory Pvt. Ltd., Mumbai); AMIT KUMAR (Malaviya National Institute of Technology Jaipur)	258
172	Solar PV Based Grid Scale Battery Energy Storage System with IBC and DAB	Garima Sharma (MNNIT ALLAHABAD); Rajesh Gupta (NIT, Allahabad)*	264
175	Automated Segmentation of Infarct Core in NonContrast CT Scans of Ischemic Stroke Patients	Akhil U (Amrita College of Computing); Vivek Menon (Amrita Vishwa Vidyapeetham)*; Vivek Nambiar (Amrita Institute of Medical Sciences); Karthika Rani P.T. (Amrita Institute of Medical Sciences)	270

176	A Deep Learning Methodology CNN-ADAM for the Prediction of PCOS from Text Report	Neetha Thomas (Santhigiri College,Vazithala)*; Bosco Paul Alapat (CHRIST(DEEMED TO BE UNIVERSITY));Resmi K R (CHRIST(DEEMED TO BE UNIVERSITY)); Mahesh Jose (AXIS Bank)	276
178	Improved Dual Measurement System based on SDFT-FLL with High Accuracy	Sumathi P (Indian Institute of Technology Roorkee)*; ranjan tiwari (IIT Roorkee)	282
181	State of Charge based Electric Vehicle Scheduling Within Existing Fast Charging Stations	ADEPU VAMSHI (National Institute of Technology Andhra Pradesh)*; JAYARAM NAKKA (NIT ANDHRA PRADESH)	287
184	Innovative Communication Solutions for SpeciallyAble Individuals: A Machine Learning- Approach to EEG Interpretation	Anikait Thakur (PSG College of Technology)*; Girish Krithik G J (PSG College of Technology); Kapilash K (PSG College of Technology); Saumarghya Ray (PSG College of Technology); Parthasarathy S (PSG College of Technology); Vani K (PSG College of Technology)	293
186	Classification of Skin Disease Dermoscopy Images Utilizing Multi-headed CNN	ANURODH KUMAR (IIITDM JABALPUR)*; Amit Vishwakarma (PDPM IIITDM Jabalpur); Varun Bajaj (PDPM IIITDM Jabalpur)	299
189	Abnormal Conditions and their Classification in Photovoltaic Array using Artificial Neural Network	Riya Kumari (Motilal Nehru National Institute of Technology Allahabad); Prabhjout Arora (Motilal Nehru National Institute of Technology Allahabad); Raj (Motilal Nehru National Institute of Technology Allahabad); Rajesh Gupta (NIT, Allahabad)*	304
211	A Comparative Analysis of Deep Learning Algorithms for Predicting Parkinson's Disease, Chronic Kidney Disease, and Liver Disease	Sameeksha sukate (MIT ADT University)*; Satyam Bhalerao (MIT ADT)	310
212	TFT-Powered PV Production Forecasting: A Multivariate Approach for Long, Medium, and Short Terms	Dora Praveen Kumar (Hitachi Energy, Bangalore, India)*; Silvia Picerno (Hitachi Energy, Genova Italy)	316
215	A Machine Learning Approach for Predicting Personality Traits	Zainab Khan (K J Somaiya Institute of Technology)*, Sarita Ambadekar (K J Somaiya Institute of Technology)	322
217	Implementation of Sorted Stair-Case Modulation and Sorted Phase Disposition PWM for Grid-Tied Multi-Level Inverter	Gudipati Maheswari (NIT Karnataka)*; K Manjunatha Sharma (NIT Karnataka); Prajof P (NIT Surathkal)	328
221	Analysis of Non-Minimum Phase Fourth-Order Buck Boost Converter	Jaldu Asish (PES UNIVERSITY)*; Megha T S (PES University); Laqueta N (PES UNIVERSITY); Rashmi Seethur (PES university)	334
237	Comparative performance analysis of machine learning algorithms in partial discharge source classification	Arvind Sharma (Dr B R Ambedkar National Institute of Technology, Jalandhar)*; Hari murugan (NIT Jalandhar); T Bhavani Shanker (Central Power Research Institute Bangalore, India)	340
242	Leveraging LLMs for Video Querying	Ameya Jangam (Sardar Patel Institute of Technology); Atharva P Mohite (Sardar Patel Institute of Technology)*; Deep U Nayak (Sardar Patel Institute of Technology); Anant V Nimkar (Sardar Patel Institute of Technology, Mumbai)	346

243	Keyframe Extraction assisted Crime Detection	Ameya Jangam (Sardar Patel Institute of Technology); Atharva P Mohite (Sardar Patel Institute of Technology)*; Deep U Nayak (Sardar Patel Institute of Technology); Anant V Nimkar (Sardar Patel Institute of Technology, Mumbai)	352
247	Automatically Classify each sentence from Indian Legal Judgements to its Semantic Role	Niranjan Laxman Adsul (COEP Technological University, Pune)*; Pratiksha Deshmukh (COEP Technological University,Pune)	358
252	Anomaly Detection from Web Log Data using Machine Learning Model	Amit Kumar Mishra (Graphic Era Hill University, Dehradun, Uttarakhand)*; Piyush Bagla (Dr B R Ambedkar National Institute of Technology Jalandhar); Ravi Sharma (National Institute of Technology, Jalandhar); Neeraj Kumar Pandey (Graphic Era Deemed to be University Dehradun); Neha Tripathi (Graphic Era (Deemed to be University))	364
256	Sensitivity of Threshold value 'r' in Approximate Entropy based Brain-Computer Interface	C Sivananda Reddy (Indian Institute of Technology Madras)*; M Ramasubba Reddy (Indian Institute of Technology Madras)	370
268	Enhanced Frequency-Based Word Embedding Approach For Text Analysis: Comparative Study With Existing Method	kunal dumbre (D. Y. Patil International University, Akurdi)*; bahubali shiragapur (D. Y. Patil International University (DYPIU)); Yash Sanjay More (D. Y. Patil International University (DYPIU)); vaishnav kale (D. Y. Patil International University (DYPIU))	376
271	Performance Investigation of Triple Ring Resonator Based Optical Filter Through Eye Diagram	Binshati Chatterjee (M S Ramaiah Institute of Technology); Sanjoy Mandal (Indian Institute of Technology (Indian School of Mines)Dhanbad, India)*	382
272	A Novel Hybrid Solid State Circuit Breaker for DC System	SHUBHAM SHASWAT (Motilal Nehru National Institute of Technology, Allahabad, Prayagraj)*; Saumendra Sarangi (MNNIT, Allahabad); Rajesh Gupta (NIT, Allahabad)	387
279	Performance Investigation of Five-Phase OpenEnd Winding Induction Motor Drive	Ashutosh Yadav (Harcourt Butler Technical University, Kanpur)*; Sanjiv Kumar (Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India); Yash Yuvraj Singh (Harcourt Butler Technical University, Kanpur); Suyash Tripathi (Harcourt Butler Technical University, Kanpur); Vinayak Mishra (Harcourt Butler Technical University, Kanpur)	393
282	Modelling of EV penetration for an Indian state using Machine Learning Approach	Devender Kumar Saini (UPES, Dehradun, India)*; ABHAY CHHETRI (UPES)	399
283	Addressing the Impact of Localized Training Data in Graph Neural Networks	Akansha A (Manipal Institute of Technology)*	405
286	Comparative Analysis Between Bi-LSTM and UniLSTM Algorithms for Wind Speed Estimation	Sarvendra Kumar Singh (Netaji Shubhash University of Technology)*, Shyama Kant Jha (Netaji Shubhash University of Technology), and Rahul Gupta (Netaji Shubhash University of Technology)	411
288	Geo-specific Deviation Settlement Mechanism for Wind Generating Stations	NAVEEN KUMAR MEKA (IIT GUWAHATI)*; PRAVEEN TRIPATHY (IIT GUWAHATI)	417
291	Machine Learning Model for Transformer Health Monitoring and Fault Detection	Anoop Kumar Gautam (IIT JAMMU), JASDEEP KOUR (IIT JAMMU)*, Anup Shukla (IIT JAMMU)	422

293	A TORQUE-REGULATED INDUCTION MOTOR DRIVE WITH A TINY DC LINK USING ACTIVE FRONT-END CONTROL	Praveen Kumar N (Amrita Vishwa Vidyapeetham)*; Gokulnath J (Amrita Vishwa Vidyapeetham); Sivakumar S (Amrita Vishwa Vidyapeetham)	428
294	Comprehensive Study of Weather Prediction Using IoT and Machine Learning	Balaji Subramanian (Vellore Institute of Technology)*; Vidhya Sakar I (Vellore Institute of Technology); Nitheesh Kumar S (Vellore Institute of Technology); Sai Aasrith A (Vellore Institute of Technology); Lalitha Raghuraman (Vellore Institute of Technology); Karthick Ajan G S (Vellore Institute of Technology)	434
295	ANFIS VSG Control of Autonomous AC Microgrid based on optimal Inertia	Nivedha S (College of Engineering Guindy)*; Lakshmi P (CEG, Anna university, Chennai); Somasundaram P (CEG, Anna University)	440
299	Unravelling the Green Potential: Examining 5G's Innovation Trends in Energy Efficiency	Preetjot Kaur (UIET Panjab University Chandigarh)*; Roopali Garg (Panjab University)	445
300	Spatial Analysis and Clustering of Electric Vehicle Density for Charging Infrastructure Planning	Devender Kumar Saini (UPES, Dehradun, India)*; Mayank Saklani (UPES Dehradun/ Electrical Cluster)	451
301	Novel Dual Active Asymmetric Bidirectional Converter with Hybrid Control Strategy	Swati U Jaju (COEP Tech, Pune)*; Sanjay Dambhare (COEP Tech, Pune); Milind Bagewadi (COEP Tech, Pune)	457
303	Breadth-First-Search based Phase Unwrapping Algorithm for Quantitative Phase Imaging	Anik Ghosh (Indian Institute of Technology Guwahati); Deep Arya (Indian Institute of Technology Guwahati); Rishikesh Dilip Kulkarni (Indian Institute of Technology Guwahati)*	463
304	Flexible CPW-Fed Circular Ring Antenna on Multilayer PDMS+ULTRALAM 3850HT Substrate for the Wearable Applications	sushma Choudhary (Jawaharlal Nehru university)*; Poonam Agarwal (Jawaharlal Nehru University)	467
305	Application of Electromagnetic Time Reversal Similarity Metric to Locate Partial Discharge in Transformer Winding	Viral Rathod (Indian Institute of Technology Roorkee)*; Ganesh Kumbhar (Indian Institute of Technology Roorkee); Bhavesh Bhalja (IIT ROORKEE)	471
307	Deployment of Reserve Corridors in PV Integrated Power System and Performance Analysis	Deepti Singh (KIET Group of Institutions, Delhi-NCR, Ghaziabad, Uttar Pradesh)*; Nitai Pal (IIT Dhanbad); Brijesh Singh ("KIET Group of Institutions, Ghaziabad")	475
308	Application of fractional order PID control for the robotic rehabilitation exoskeleton using grey wolf optimization	Richa Sharma (Dr B R Ambedkar National Institute of Technology Jalandhar, Punjab)*	480
310	Improved Forecasting of Electric Vehicle Charging Load using Neural Architecture Search	Subhadeep Kar (Indian Institute of Engineering Science and Technology, Shibpur); SAYANEE DAS (Indian Institute of Engineering Science and Technology, Shibpur)*; Paramita Chattopadhyay (IEST, Shibpur)	486
318	Neural network-based time stepping scheme for multiscale partial differential equations	Asif Hamid (IUST)*; Danish Rafiq (IUST); Shahkar Ahmad Nahvi (IUST); Mohammad Abid Bazaz (NIT Srinagar)	492
319	Enhancing Condition Monitoring of Outdoor Insulator through EfficientNet Classifier	Satyajit Panigrahy (NIT Rourkela)*; Subrata Karmakar (National Institute of Technology Rourkela)	498

321	A Reduced Component Count Multilevel Inverter for Single and Three Phase Applications	Dr. Rubell Sen Goopta (Chittagong Independent University)*; Abdul Awal Rafi (Chittagong Independent University); Shubhajit Pal (Indian Institute Of Technology–Roorkee (IIT–Roorkee)); Avik Bhattacharya (Indian Institute of Technology Roorkee)	504
326	Load Frequency Control of an Interconnected Microgrid using MGO-based 2DOF-PID Controller	Kona Amarendra (NIT Andhra Pradesh); Kiran Teeparthi (National Institute of Technology, Andhra Pradesh)*; Raghu Vamsi Yarlagadda (National Institute of Technology Andhra Pradesh); Venkataramana Veeramsetty (SRU, Warangal); V V N Prasad Thota (NIT Andhra Pradesh)	510
327	Comparison of environmentally sustainable 4wheeler transportation in India using life-cycle greenhouse gas emissions	Harshendra N Shet (Manipal Institute of Technology)*; Vijayanand Moholkar (Indian Institute of Technology, Guwahati)	516
328	A Robust Energy Management Strategy for Multi Carrier Energy System	ANKIT GARG (MNIT JAIPUR)*; Khaleequr Rehman Niazi (MNIT Jaipur India)	522
330	A Comparison between Weibull and Rayleigh Distribution for Wind Energy Potential Estimation	NIRVAY KUMAR SINGH (Bureau Veritas)*, Ravi Gupta (Bureau Veritas,India), Premalata Jena (Indian Institute of Technology Roorkee)	527
331	CNN-FD:deep Convolutional Neural Network model for Fire Detection	ARVIND KUMAR VISHWAKARMA (NATIONAL INSTITUTE OF TECHNOLOGY); Maroti Deshmukh (NIT Uttarakhand)*	531
333	Temporal-domain Analysis of Meditation and Mindwandering EEG Signals for Different Meditation Traditions	Katinder Kaur (Punjab Engineering College)*; Padmavati Khandnor (Punjab Engineering College)	537
334	Prediction of Confidence Score of Myocardial Infarction using Multiscale Energy and Eigenspace Features	AKRITI JAISWAL (IIT, GUWAHATI)*; Pharvesh Salman Choudhary (Indian Institute of technology Guwahati); Samarendra Dandapat (Indian Institute of technology Guwahati); Parbin Bora (IIT, Guwahati)	543
337	Performance Analysis of Space Vector Approach Based Field Oriented Control of Indirect Matrix Converter Fed PMSM Drive	Sajid Ahmad Khanday (National Institute of Technology Srinagar, J & K), Abdul Hamid Bhat (National Institute of Technology Srinagar, J & K)*,Obbu Candra Sekhar (National Institute of Technology Delhi)	549
340	SOM Network with Weighted Least Norm Matrix Based Redundancy Resolution for a 5-DOF Spatial Robotic Manipulator	Felix Orlando Maria Joseph (Indian Institute of Technology Roorkee)*, Saumitra Kuri (University of Chittagong), Kaushik Haldar (Indian Institute of Technology Roorkee)	555
342	Experimental Investigation of the Effectiveness and Robustness of Active Disturbance Rejection Control using a DC Motor-Driven Piston	Shoaib Hamid Peerzada (NIT Srinagar)*; Sobia Shafi (Islamic University of Science and Technology); Shahkar Ahmad Nahvi (Islamic University of Science and Technology); Mohammad Abid Bazaz (NIT Srinagar); Majid Hameed Koul (Islamic University of Science and Technology)	561
343	Cyber-Attack Detection in Smart Grids Using Machine Learning Approach	Achal M Talati (IIT Roorkee)*; Vaibhav Garg (IIT Roorkee); Prabhat S Tiwari (IIT Roorkee); Naman Mishra (IIT Roorkee); Premalata Jena (Indian Institute of Technology Roorkee)	567
344	Stabilizing a Collaborative Twin Quadrotor System for Hovering with a Cable-Suspended Extended Payload	Sohom Chakrabarty (IIT Roorkee)*; Prabhav Saxena (DTU); ASHISH KUMAR SHAKYA (Indian Institute of Technology Roorkee,Uttarakhand,India)	573

346	Condition Monitoring of Solar PV System using Different Methods in Varying Environment Condition -A Review	Jose Thankachan (NIT Tiruchirappalli)*; Sneha Mahobiya (NIT Tiruchirappalli)	579
350	Multi-objective Optimal Placement of Static Transfer Switches in LV Distribution System with PV Penetration	anant vinayak magar (college of engineering pune)*; Atul Phadke (college of engineering pune)	585
351	An Efficient Regulated Battery Charger with Minimum Ripple Current For Electric Vehicle	Minakshi Singh (Netaji subhas University of Technology)*, Alok Prakash Mittal (Netaji subhas University of Technology), Ankit Kumar singh (Netaji subhas University of Technology)	591
354	Power Management Control Technique of Fuel Cell Operated Multiport bidirectional dc/dc converters	Sonali Chetan Rangari (Shri Ramdeobaba College of Engineering and Management, Nagpur); Sanket Murlidhar Shelki (Shri Ramdeobaba College of Engineering and Management, Nagpur); Chandradeo Rana (Shri Ramdeobaba College of Engineering and Management)*	597
361	Precoded GSM with artificial noise for NOMA aided multiuser MIMO downlink transmission	Shekhar Pratap Singh (IIT Roorkee); Pyari M Pradhan (IIT Roorkee)*	603
362	Optimal Power Flow Analysis using Improved Gradient Free JAYA based Algorithm	Prahlad Mundotiya (Malviya National Institute of Technology Jaipur)*; Ankush Koli (Malaviya National Institute of Technology, Jaipur); HARPAL TIWARI (MALVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR); Subhash Shrimal (Malviya National Institute of Technology Jaipur); Chandra Prakash Naga (BTU Bikaner)	609
363	Reliability Evaluation of a Radial Distribution System with the Placement of Shunt Capacitors and Fault Passage Indicators Considering Normal and Adverse Weather Effects	Gollapelli Kirankumar (University College of Engineering, Osmania University)*; E Vidya Sagar (University College of Engineering, Osmania University)	615
365	Low Pass Filter Less Sliding mode Observer using QPR Controller for PMSM fed Electric Vehicle	SANJAY KUMAR KAKODIA (MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY)*; GiriBabu Dyanamina (Maulana Azad National Institute of Technology Bhopal)	621
366	Short Term Electricity Price Forecasting by Optimized LSTM Model of Deep Learning with Genetic Algorithm	ASHISH PRAJESH (MNIT Jaipur)*; Prerna Jain (MNIT Jaipur); Samradh Dhingra (MNIT Jaipur); Rishabh . (MNIT); Aisha Malik (MNIT); Suhani Agrawal (MNIT)	627
367	Comparison of Reliability Based Customer Interruption Cost for Indian Rural & Urban LVDS with Corresponding HVDS	Vasantha Gadde (Osmania University)*; Vidya sagar E (OSMANIA UNIVERSITY)	633
368	Experimental Validation and Analysis of Battery Storage Grid Connected Converter: A Study with Li-ion and Lead-Acid Batteries	Nivedika Kher (SMVDU); sonam gupta (Indian Institute of Technology Jammu)*; Lokesh Sharma (IIT Jammu); Anup Shukla (IIT Jammu)	639
372	Enhancing ASD Cognitive Assessment with P300 Classification using EMD-based qEEG Wavelet Features	Madhuparna Das (IIT kharagpur)*; Manjunatha Mahadevappa (IIT Kharagpur)	645
375	Parametric Fault diagnosis of buck converter based on Machine Learning	Prathiba RV (Thiagarajar College of Engineering)*; SARAVANAN M (TCE)	651

379	Automatic Road Traffic Analyzer using Background Subtraction, Blob Analysis, and Tracking Algorithms	Rahul Kumar Chaurasiya (Maulana Azad National Institute of Technology Bhopal)*; Priyanka Gondane (National Institute of Technology Raipur); Bibhudendra Acharya (National Institute of Technology Raipur); Mohammad Imroze Khan (NIT Raipur)	656
381	CVT Failures and Impact on Synchrophasor based Dynamic Monitoring	shaily singh (IIT Jodhpur)*; Dr. Ravi Yadav (Indian institute of Technology Jodhpur)	662
382	Derived Modular Multilevel Converter For EV Charging Stations	JAYANT KUMAR (IIT ROORKEE); Shourya Sharma (IIT Roorkee); Siba Kumar Patro (Indian Institute of Technology Roorkee)*	667
383	Real Time Data based Automated Resume Classification and Job Matching using SVC, Jaccard Index and Cosine Similarity	Maitri Dipak Amin (Veermata Jijabai Technological Institute, Mumbai)*; Aishwarya C Harkare (Veermata Jijabai Technological Institute); Nitya Singh Parmar (Veermata Jijabai Technological Institute); Ruchika Wadhwa (Veermata Jijabai Technological Institute); Rajesh Patil (Veermata Jijabai Technological Institute)	673
391	Design and Simulation of 1kW Isolated AC-DC Converter Based on Planer Transformer	Govind J Haibate (COEP Technological University)*; Rajaram T Ugale (COEP Technological University)	679
392	Solar Photovoltaic Supported Reconfigurable EV Battery Charger with Grid Feeding	Akhouri Prateek Sinha (IIT Kanpur); Rajesh Gupta (NIT, Allahabad)*	685
393	Development and Control of a Four-Wheel Drive Holonomic Mobile Robot	Manavaalan Gunasekaran (Coimbatore Institute of Technology); Felix Orlando Maria Joseph (Indian Institute of Technology Roorkee)*; Karon S (Coimbatore Institute of Technology); Krishna R (Coimbatore Institute of Technology); Lokeshwar Raj M (Coimbatore Institute of Technology); Hema Priya P (Coimbatore Institute of Technology)	691
399	A Survey on Intrusion Detection System in Smart City: Security Concerns	Nandhini N (Coimbatore Institute of Technology)*; Manavaalan Gunasekaran (Coimbatore Institute of Technology); Manikandan V (Coimbatore Institute of Technology); Elango S (Coimbatore Institute of Technology); Jeevakarunya C (Coimbatore Institute of Technology); VINODH KUMAR P (COIMBATORE INSTITUTE OF TECHNOLOGY)	697
400	Optimal Power Flow Solution Using Gorilla Troops Optimizer	Abhishek Saini (NIT Hmaipur)*, O.P Rahi (NIT Hmaipur)	703
401	Modified MPPT Control of a PMSG-based Standalone Wind Energy Conversion System using Single Voltage Sensor	BALAJI MENDI (NATIONAL INSTITUTE OF TECHNOLOGY ROORKELA)*; MONALISA PATTNAIK (National Institute of Technology, Rourkela); Dr. Gopalakrishna Srungavarapu (NIT Roukela)	709
403	Instantaneous Power based Effective Power Balance Operation in All-Electric Ship Microgrid	Abinaya K (SRMIST)*, U Sowmmiya (SRMIST)	715
407	Planning of Electric Vehicle Charging Stations for Four Wheeled Passenger Vehicles in Guwahati: An Approach through Genetic Algorithm	Siddhartha (Indian Institute of Technology, Guwahati)*; Harsh Chaturvedi (Indian Institute of Technology Guwahati)	721
417	Design Approach and Performance Analysis of Type I, Type II, and Type III PLL	Lotika Devi (Delhi Technological University)*; Alka Singh (Delhi Technological University)	727

418	Control and Analysis of a Grid Following Converter using Adaptive Log Family based SOGI	Vineet Kumar (Delhi Technological University)*; Alka Singh (Delhi Technological University); Prakash Chittora (Delhi technological university)	733
419	Setting-free Smart Recloser for Three Terminal Mixed Lines	Kukkala Likhitha (Hitachi Energy)*; OD Naidu (Hitachi Energy)	739
420	Performance Analysis of ANFIS based Speed Controllers with Voltage Feed Forward Compensation for Field Oriented Control of PMSM	Jitesh P Thakare (COEP Technological University,Pune)*; Snehal Unde (COEP Technological University,Pune)	745
422	Advanced Automotive Quality Assurance: A Comprehensive Approach to Power Window Functionality Testing through Software Test Automation	Neha Abarao Rathod (College of Engineering, Pune)*; Rhan Kulkarni (KJ College of Engineering and Management Research, Pune), Suhas Kakade (College of Engineering, Pune), Aresh Ray (Brose India Automotive Systems Private Limited)	751
423	An innovative islanding detection scheme in distributed generation using rate of change of the ratio of negative and positive sequence superimposed voltage components.	Javeed Bashir (Islamic University of Science and Technology)*, Mohammad Sajid Aalam (Indian Institute of Technoogy Roorkee), Mir Uzair Kanth (Indian Institute of Technoogy Roorkee), Premalata Jena (Indian Institute of Technoogy Roorkee),	757
425	Development of Telemetry System for Electric Vehicle	Rohan Mahantesh Mundige (Ramaiah Institute of Technology)*; Stephen Abay Joseph (Ramaiah Institute of Technology); Chandrashekar Badachi (Ramaiah Institute of Technology); Aditya Sharma (Ramaiah Institute of Technology); Aditya Jha (Ramaiah Institute of Technology)	761
428	Structural Design and Analysis of an AMR Chassis for Industrial Payload Transportation	Sohom Chakrabarty (IIT Roorkee)*; Ujjwal Gupta (Georgia Institute of Technology USA); SAMSAPTAK GHOSH (Indian Institute of Technology Roorkee); Felix Orlando Maria Joseph (Indian Institute of Technology Roorkee)	767
431	Design and development of a collision avoidance system for an Automated Mobile Robot	Sohom Chakrabarty (IIT Roorkee)*; SAMSAPTAK GHOSH (Indian Institute of Technology Roorkee); Dheeraj Etta (Cornell University USA); Felix Orlando Maria Joseph (Indian Institute of Technology Roorkee)	773
434	IMPLEMENTATION OF CYCLOCONVERTER FOR SPEED CONTROL OF INDUCTION MOTOR	Sandya Kamashetty (BMSCE)*, C Lakshminarayana (BMSCE)	779
437	Improving Seizure Detection by Integrating Feature Selection and Classification Techniques	Venkata Narayana Vaddi (NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL)*; Prakash K (NIT Warangal)	784
438	Bi-Directional Converter for Hybrid Energy storage system	Divya Y V (BMSCE)*, Prema V (BMSCE)	790
439	Reactive Power Compensation Using Variable shunt Reactor	nihalini baline (Indian Institute of Technology, Madras)*; Roshin K R (Government Engineering College, Thrissur); K Shanti Swarup (IIT Madras)	796