

2025 International Conference on Electrical and Electronics Engineering (ICE3 2025)

**Gorakhpur, India
19-20 September 2025**

IEEE Catalog Number:
ISBN:

CFP25V87-POD
979-8-3315-7528-1



Copyright © 2025, IEEE

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:	CFP25V87-POD
ISBN (Print-On-Demand):	979-8-3315-7528-1
ISBN (Online):	979-8-3315-7527-4

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

TABLE OF CONTENTS

Variable Inductor Converter Compensation in Wireless Series-Series Topology for Electric Vehicle Charging System	1
<i>Sagun Rai, Navdeep Singh, Nikita Prajapati, Manoj Kumar Yadav, Mukh Raj Yadav</i>	
Comparative Study of Deterministic SOT Switching in W/CoFeB and Bi ₂ Se ₃ /CoFeB under Tilted Anisotropy	7
<i>Piyush Tankwal, Vikas Nehra, Satendra Kumar Mourya</i>	
A ResNet Transformer Hybrid Approach for Enhanced Detection of Retinal Diseases	11
<i>Gouri Sharma, Vijay Shankar Sharma, Atul Srivastava, Sandeep Kumar Sharma</i>	
Design and Implementation of AMBA ABP Interface	17
<i>Deepak, Vikas Nehra</i>	
Energy Efficient Wireless Sensor Network Using Sparrow Search Algorithm Optimization And 6G Technology	22
<i>Manish Bhatt, O.P. Singh, Sudhanshu Tyagi, Sachin Kumar</i>	
Performance Analysis of High Speed Dynamic Comparator Topologies for Low Power VLSI Applications	28
<i>Km. Akhya Pandey, Anurag Yadav, Subodh Wairya</i>	
A Framework for Analyzing Financial Market Risks Using Multi Model Machine Learning Approach and Efficient Financial Indicators	34
<i>Tanisha Salil Mishra, Vijay Shankar Sharma, Atul Srivastava, Sandeep Kumar Sharma</i>	
An Innovative Energy Management Techniques for Hybrid EVs	40
<i>Gundi Ice, Sundeep Siddula</i>	
Dual-Source Energy Management Strategy for Electric Vehicles: Battery and Fuel Cell Approach	45
<i>Sundeep Siddula, Dongari Archana, Bathula Poojitha, Kanukuntla Tejasri, Siddhartha Konderi</i>	
Adaptive Step Size PSO-P&O MPPT for Standalone PV Systems Using a Cuk Converter	51
<i>Arushi Gupta, Ranitesh Gupta, Satyendra Singh</i>	
The Empirical Study of Biometric Systems and Drones	57
<i>Neha Singh, Ajita Pathak, Suman Mishra</i>	
A Lyapunov-Based Age of Information and Energy Consumption Optimization in D2D-Aided Social IoT Networks	62
<i>Saurabh Chandra, Rajeev Arya, Maheshwari Prasad Singh</i>	
Unified Deep Learning Framework for Multi-Retinal Disease and Corneal Arcus Detection with Cholesterol Estimation in Real-Time Applications	68
<i>Bollini Manojkumar, K S Chakradhar</i>	
IOT-Web Monitor and Controlled Real Time Smart Drip Irrigation System Using ESP32 Microcontroller	76
<i>G Srilatha, Subramanya Sarma S, P A Sunny Dayal, V N S R Murthy, Ch Kishore Babu, P Devadass</i>	

Adaptive Energy Management for Grid-Connected EV Charging Stations Using Solar PV and Battery Storage	84
<i>Amanpreet Kaur, Rishabh Dev Shukla, Manish, Rupam Bhagawati, Sunny Vig</i>	
Short-Channel Effects and Leakage Reduction in FinFET Devices	89
<i>Gaurav Aggarwal, Rishabh Dev Shukla, Genius Chauhan</i>	
Design and Analysis of Advanced Microstrip Patch Antenna for Millimeter-wave Communication	93
<i>Khaing Su Latt Thar, Thiha Naing, Bimal Raj Dutta, Manish Deshwal, Gaurav Aggarwal, Rishabh Dev Shukla</i>	
Real-Time Facial Region Identification Via a Custom Six-Layer Convolutional Network	99
<i>Pan Thiri Tun, Keniya Roy, Oakkar Min, Manish Deshwal, Gaurav Aggarwal, Rishabh Dev Shukla</i>	
IoT Based Flood Monitoring and Control System	104
<i>Thakur Ankit Krishna Kumar, Abhishek Kumar, Ankit Singh, Gaurav Pal, Manish Pal, Mahima Tyagi</i>	
Demand Response Management in an EV Integrated Distribution System	109
<i>Filza Alam, K Seethalekshmi, Nitin AnandShrivastava, Arvind Kumar</i>	
Presentation Attack Detection Using Fingerprint Image by Efficient Ensemble Stacking Method (EESM)	115
<i>Dharmendra Kaushik, Alok Kumar Singh Kushwaha, Vinay Kumar</i>	
Unveiling the Power of YOLO: Enhanced Number Plate Recognition System	121
<i>Bhawana Srivastava, Poonam Chahal</i>	
Study and Analysis of NO ₂ Gas Sensing Using PdDoped WS ₂ Monolayer: A First-Principle Approach	128
<i>Gautam Kumar Jaiswal, B.P. Pandey, R.K. Chauhan, Neha Mishra, S.N. Jaiswal, Shubham Gupta</i>	
Hybrid Feature Fusion for EEG-Based Seizure Detection:A Deep vs Shallow Model Analysis	134
<i>Arathy Rajeev, Sandeep Kumar</i>	
Evaluation of Drain Pocket Hetero Dielectric Double Gate TFET for Improving Low Power and High-Speed performance of transistor for various Analog, RF, and Digital Application	140
<i>Ankit Kumar Singh, Sandeep Kumar, Arathy Rajeev, Pranshu Upadhyay</i>	
Gold Coated PCF-SPR Sensor With Dual Core For Refractive Index Sensor Application	146
<i>Sushma Sawraj, Anupam Sahu, Dharmendra Kumar, Sudhanshu Verma</i>	
Nitride-Based Surface Plasmon Resonance Sensor with Enhanced Sensitivity for Adrenal Gland Cancer Detection	151
<i>Shivangani, Anupam Sahu, Dharmendra Kumar</i>	
Performance Analysis of Full-duplex650nm Laser Nodes in Optical Wireless Communication System for File and Data Transfer	157
<i>Dhruv Gupta, Praranya Giri, Abhigya Gupta, Adi Garg, Km Priyanka, Ritu Raj Singh</i>	
Optimization of LMA-10 and LMA-25 PCF for Low-Loss Optical Transmission in High-Power Applications	162
<i>Sonu Kumar, Rajesh Kumar, Ghufan Mahmood, Rahul Kumar, Km Priyanka, Ritu Raj Singh</i>	
Intelligent control of Autonomous Underwater Vehicle for 3DPath Planning using Enhanced Subpopulation-Based Differential Evolution Algorithm	167
<i>Shubham Gupta, Vinay Kumar, Deepak Sahu, Sadanand Yadav</i>	

Birefringent Microstructured Optical Fiber for Breast Cancer Detection	174
<i>Sneha Sharma, Premanand Patel, Vijay Shanker Chaudhary, Dharmendra Kumar</i>	
Predictive Modeling of Hybrid Laminated Composites Under Combined Loading Using ANSYS Finite Element Method	180
<i>Ashish Apate, Sanjeev Kumar, Nitin H. Ambhore</i>	
Signal Integrity Enhancement of MWCNT Interconnects via Machine Learning	186
<i>Vijay Rao Kumbhare, B. Sudharshini Sree, M. A. Jahangeer Pasha, N. Apoorva, Bittu Kumar</i>	
<i>Ashwini Kumar Varma, Amit Kumar Shrivastava</i>	
Blockchain-Enabled Land Registry Systems: A Study on Security and Architectural Design	192
<i>Atul Lal Shrivastava, Rajendra Kumar Dwivedi, Shiva Prakash, Garima Yadav</i>	
High Speed Double Tail Dynamic Comparator with Enhanced Amplification and Latch Stages Using Cascode and Charge Sharing Techniques	196
<i>Km. Akhya Pandey, Anurag Yadav, Subodh Wairya</i>	
Low Profile Polarization-Insensitive Broadband Capacitive Circuit Absorber using Lumped Resistors for RCS Reduction	202
<i>Nitin Mohan, O P Singh, A K Singh</i>	
IoT-Enabled Real-Time Indian Sign Language Interpreter Using Raspberry Pi and MediaPipe	206
<i>Jahnvi Rai, Shivam Kumar Yadav, Sanjay Kumar Soni</i>	
Role of Generative AI in Healthcare System	212
<i>Raj Kishor Verma, Archit Garg, Akash Yadav, Adarsh Yadav</i>	
An Adaptive, Context-Aware, And Linguistically Informed Deep Learning Based Optimized Model For Fake Review Identification In Bengali Language	216
<i>Ravi Pal, Shiva Prakash</i>	
Dynamic Discharge Rate Control with SOC Constraints and MPPT Synchronization: A BDDCBased Energy Management Strategy for SolarBattery Integration	221
<i>Pankaj Kumar Sharma, Pushpendra Singh, S.C. Choubé, L.S. Titare</i>	
A CNN-Based Framework For Microorganism Classification Using Deep Learning	227
<i>Tushant Kumar, Stuti Soni, Sanjay Kumar Soni</i>	
Solar PV Based Hybrid Power Management System for DC and AC Load in Electric Vehicle Applications	233
<i>G Sasi Kumar, G Srinivasagupta, Varun Kyadasi</i>	
Performance Evaluation of a $\text{CH}_3\text{NH}_3\text{SnBr}_3$ Perovskite Photodetector for Low-Intensity Light Detection	239
<i>Richa Srivastava, Sudhanshu Verma, Anupam Sahu</i>	
Performance Analysis of High Voltage Distribution System: A Case Study of MMMUT Gorakhpur	245
<i>Aakash Deep Chaudhary, Prabhakar Tiwari</i>	
Early Detection of Mycobacterium Tuberculosis Based on Multilayer SPR Sensor Incorporating ReS_2 /Graphene interface	253
<i>Pransi Mani Tripathi, Anupam Sahu, Shivangani, Sudhanshu Verma</i>	

An Optimized Performance Analysis Of Tin-Based Perovskite (CH ₃ NH ₃ SnI ₃) Solar Cells With Tungsten Disulfide (WS ₂) as ETL and TAPC as HTL	259
<i>Shatrughan Mishra, Pooja Lohia, Yashwant Kumar Singh, D.K. Dwivedi</i>	
Fuzzy Logic Based Hybrid Spectrum Sensing in Cognitive Radio Networks	265
<i>Shiv Kumar Vishwakarma, Jaspreet Kaur, Neelam Srivastava</i>	
BillBot: A Smart RFID-Based Automated Billing System for Retail and Smart Carts	272
<i>Ankit Kumar, Vishnu Kumar, Sanjay Kumar Soni</i>	
Performance Evaluation of Fuzzy Logic MPPT in Photovoltaic Grid Systems	277
<i>Rajeev Gupta, Vimal Mishra, Saurabh Kumar</i>	
An Intelligent Approach to EV Charging and Hydrogen Dispatch Using Particle Swarm Optimization	283
<i>Abhishek Kumar Singh, Ashish Singh, Isha Chandra, Navneet Kumar Singh, Nitin Singh, Asheesh Kumar Singh</i>	
Numerical Modeling of an Enhanced Twin-Core Hexagonal PCF-Based High Sensitivity SPR Sensor	289
<i>Shreya Gupta, Sudhanshu Verma, Dharmendra Kumar, Anupam Sahu</i>	
Solar Energy Prediction Using LSTM and MLP: Performance Evaluation on Real-World Data	295
<i>Gargi Mishra, Pratibha Sahu, Ruchi Tripathi</i>	
Distributed Data Clustering using Chaotic Red-Billed Blue Magpie Optimization in IoT Networks	300
<i>Anita Panwar, Dinesh Kumar Kotary</i>	
From Data to Action: Machine Learning Applications in Predicting and Preventing Waterborne Diseases	306
<i>Sonam Singh, Saroj Singh, Alok Kumar Gupta, Ayushi Patel, Divya Mishra</i>	
Transient Stability Detection Using Fuzzy Logic in the IEEE 9 Bus System	312
<i>Arvind Kumar Mishra, Varun Kumar, S.M. Tripathi, Manish Kumar Singh, Pankaj Kumar Dubey, Bindeshwar Singh</i>	
Optimization and Performance Analysis of Lead Free Wide-Band Double Perovskite Absorber with Double ETL Charge Carrier Layers	320
<i>Jai Shankar Singh, Rajan Mishra, Pooja Lohia</i>	
TinyEdge Based IoT-enabled Real Time Turbidity Monitoring System Using Image Processing Techniques	325
<i>Prashant Pandey, Rajan Mishra, R. K. Chauhan</i>	
A Planar Inverted F Antenna for LoRa Network with Enhanced Bandwidth for IoT Application	331
<i>Kumar Vaibhav Srivastava, Rajan Mishra, Rajeev Kumar Chauhan</i>	
Real- Time Monitoring and Visualization of Mine IoT Sensor Data Using LabView	335
<i>Swapnil Kumar, Prashant Pandey, Ravi Prakash Tripathi, Himanshu Katiyar, Adhinav Pal, Padmaja Tripathi</i>	
Analysis of spectral characteristics of Kaiser Window Function for various application	341
<i>Yatresh Mishra, Harsh Vikram Singh, Anurag Singh, Eti Srivastava, Shweta Singh, Pallavi Singh</i>	
Proactive Threat Detection in IoT Networks via Raspberry Pi-Based Honeypots	346
<i>Bhagavant K Deshpande, Rajani Kodagali, R Bharathy, Rajrupa Ray Chaudhuri, Z Justin, S. Aravind</i>	

Enhancing Skin Cancer Detection via CNNs with Regularization and Oversampling Techniques	353
<i>Cm Siddamma, D. Jansirani, A Bhagyalakshmi, S. Hema Priyadarshini, Bhavesh Berani, S. Rosaline</i>	
Data-Driven Predictive Modeling of Brain Responses under Morphological Priming Using Machine Learning	359
<i>V. Bhanu Rekha, Udit Ramalingegowda Manchattahalli, S Nithya, V. Seedha Devi, A Jose Anand Minu Susan Jacob</i>	
Detection of Papaya Ringspot Disease Using Segmentation Neural Networks in Precision Agriculture	365
<i>M. Sangeetha, A Bhagyalakshmi, A. Murugalakshmi, G. Sheeba, S. Rukmani Devi, Nirmal M. D</i>	
Network Latency Prediction Using Structured Data Completion: A Review	372
<i>Ved Prakash Tiwari, Vinay Kumar, Princy Matlani</i>	
Performance Analysis of ML Techniques for Identifying the Breast Cancer	377
<i>Bittu Kumar, Rekapalli Bhagya Srilakshmi, Kanikireddy Harshitha, Pulikollu Suma Harshita Neelakantam Aashritha</i>	
A Modified Constant Voltage MPPT Method Using Database Lookup for Enhanced PV Performance	383
<i>Pappala Vamsi Krishna, Karpagam N, Y. Alexander Jeevanantham, S. Nooray Sashmi R. Venkatasubramanian, Lingala Syam Sundar</i>	
SPR-PCF Sensor with Gold-Coated Flat Surfaces for Tunable RI Detection	390
<i>Srishti Singh, Dharmendra Kumar, Vijay Shanker Chaudhary, Santosh Kumar</i>	
Dual-Method Evaluation for Cost-Effective Renewable-Integrated EV Charging Scheduling	395
<i>Rishabh Dev Shukla, Charnjot Singh, Amanpreet Singh, Harvinder Singh, Amanpreet Kaur</i>	
Optimized V2G Strategies for Enhancing Grid Stability in Renewable Integrated Energy Systems	400
<i>Purnima Sharma, Rishabh Dev Shukla, Sunny Vig</i>	
Analysis of Energy Recovery and Switching Stress in Regenerative and Active Clamp Snubbers for Flyback Converters	406
<i>R. Ninitha Ashwini, Ila Rai</i>	
Human Hand Imitation using Machine Learning with Gesture Recognition for Surgical Assistance	414
<i>V Harsheit, Ramesh Nuthakki, Syeda Rimsha Fathima, Varam Naga Yashwanth, Ayush Pareek Shalabh Kumar Mishra</i>	
A Transformer Less Inverter Topology for Renewable Energy Application with Smart Protection Unit	418
<i>Ramchandra P. Hasabe, Amaraja Aniket Dhamangaonkar, Nikita Pramod Magdum</i>	
A Comprehensive Analysis of Wireless Power Transfer in Medical Electronics with a Focus on Sustainability	422
<i>R. Kishore Kanna, R. Anitha, K. Sundaramoorthy, K Pushpavalli, K. Arun Prasad, S. Raju</i>	
Artificial Intelligence as a Catalyst for Sustainable Innovation in Oral and Maxillofacial Radiology-Review	428
<i>R. V. Deepikaa Shri, N. Aravindha Babu, R. Kishore Kanna, R. Anitha, S. Raju, K. Sundaramoorthy</i>	
AI Frontier in Oral Cancer Detection for Early Diagnosis and Patient Outcomes Application	434
<i>Priyanka Paul, N. Aravindha Babu, K Pushpavalli, K. Arun Prasad, R. Kishore Kanna, R. Anitha</i>	

A Comprehensive Review on Computer-Based Endoscopic Image Processing Using Machine Learning Application	439
<i>T. Swetha Kumari, R. Vasuki, R. Kishore Kanna, S. Raju</i>	
AI and IoT Synergy in Predictive Diagnostics and Personalized Dental Care	446
<i>R. V. Deepikaa Shri, K. Arun Prasad, R. Kishore Kanna, S. Raju, K. Sundaramoorthy, K Pushpavalli</i>	
Design and analysis of low-power, high-output Schmitt trigger employing Domino Logic	452
<i>Shailendra Mishra, Abhay Pratap Singh, Shivangi Dwivedi, Ravi Rastogi, Anurag Govind Rao, D.K Mishra</i>	
Deep Learning Architectures for Liver Segmentation: A Comparative Evaluation on the Duke Dataset	459
<i>Sarika Srivastava, Alok Kumar Srivastava, Chandan Kumar Shukla, Kusum Rawat, Manish Mishra</i>	
Impact of Channel Fading on BER Performance in Downlink NOMA Systems	464
<i>Nimisha Srivastava, Jaspreet Kaur, Neelam Srivastava</i>	
High-Efficiency Non-Isolated Dual-Port DC-DC Converter for Solar-Powered EV Charging and Auxiliary Systems	470
<i>Banothu Somanna, Sushma Gupta, Banothu Linganna</i>	
An Evaluation of NARX and NARMAX-based Neural Networks for MPPT Control in Solar Energy Systems	474
<i>Somendra Kumar Singh, Vijay Laxmi Mishra, Asheesh Kumar Singh, Ehtesham Hassan</i>	
FloodGuard: An Embedded System for Real-Time Monitoring and Flood Management System	480
<i>Pavan Kumar Shukla, Sumit Tiwari, Dweep Kumar Singh, Ashutosh Singh</i>	
A High-Efficiency Half-Bridge LLC Resonant Converter for Low-Voltage Auxiliary Power in Electric Vehicle Charging Systems	486
<i>Malle Lingamaiah, Arvind Mittal, Shailendra Kumar</i>	
Model Predictive Control Strategy for Enhanced Voltage Regulation in Dual Active Bridge Converters for Electric Vehicles	491
<i>Sandesh Patel, Shekhar Yadav, Amit Singh, Aayushi Priyadarshini</i>	
Design and Performance Evaluation of a Power Converter for Low-Power Electric Vehicles	497
<i>Sreekanth Mamidala, Chandra Sekhar. Bairi, Venkatesh. E, Malle Lingamaiah</i>	
Analysis of Analog Characteristics of Junctionless Nanowire Gate-All-Around MOSFETs based Food Analyte Biosensors	502
<i>Ravi Rastogi, Devendra Kumar Tripathi, Sarvesh Dubey</i>	
AI Models for MRI Denoising: Unraveling the Effectiveness of Autoencoders, U-Net, and Noise2Noise	506
<i>Rohini Mahajan, Manpreet Kaur, Amit Jain, Mukesh Kumar</i>	
Solar Powered Wireless Charging System for Electric Vehicles using MATLAB/Simulink	512
<i>Shashwat Mishra, Vinod Kumar Vishwakarma, Swapnil Srivastava, Abdul Zeeshan, Harsh Tiwari Prakash Pandey, Harsh Sharma</i>	
EV Battery Management System with Integrated Charge Monitoring and Fire Protection	518
<i>Md.Atique Khan, Vinod Kumar Vishwakarma, Swapnil Srivastava, Abdul Zeeshan, Gulam Hussain Mo. Adnan, Ajit Kumar Yadav</i>	
Hybrid Model for Air Quality Prediction	524
<i>Atul Srivastava, Ankit Verma, Vijay Shankar Sharma, Kamlesh Kumar Singh</i>	

Anomaly Detection in Sensor Data using LSTM Networks for Predictive Maintenance	528
<i>Atul Srivastava, Geetanjali Singh, Vijay Shankar Sharma, Kamlesh Kumar Singh</i>	
Music Recommender Chatbot System By Face Recognition Using Machine Learning	533
<i>K Gukan Senthil, D Pragadeeswaran, L Josephine Usha</i>	
An Energy-Efficient Hybrid Neuromorphic Architecture with Spin based devices for Artificial Intelligence Applications	537
<i>Piyush Tankwal, Vikas Nehra, Satyendra Kumar Mourya</i>	
Benchmarking PPO and SAC in a Custom Energy-Constrained Disaster Drone Environment	542
<i>Frانيا Chettiar, Khushi Baid, Naisha Jain, Kapil Rathor</i>	
Earthing System Monitoring and Fault Alert Communication Mechanism using MAFIA Algorithm	548
<i>T Kokilavani, D Gunapriya, N Pushpalatha, M S Abishek, G Akash, K Dharaneesh, R S Kishore Kumar</i>	