

IPRECON 2026

IEEE INTERNATIONAL POWER AND RENEWABLE ENERGY CONFERENCE

College of Engineering Karunagappally, Kerala, India • 4 - 6 September 2026

TRACK SCHEDULE

Notes: Each oral presentation is allotted 15 minutes (12 minutes presentation + 3 minutes Q&A). Sessions marked **(Parallel)** run simultaneously in separate halls. Authors are requested to report to their session hall at least 15 minutes before the session begins. Virtual presenters will receive the online meeting link by e-mail on their registered address. For any clarification regarding your session, please contact the organising committee.

Day 1 - Friday, 04 September 2026

Track 1 - Renewable Energy & Storage - Session I (Parallel)

10:45 AM - 12:30 PM • 6 presentations × 15 min • in parallel with Track 2

PAPER ID	PAPER TITLE	PRESENTATION TIME
3	Utilizing Human Locomotion to Harvest Piezo Electric Energy	10:45 AM - 11:00 AM
4	The Correlative Study of Diverse Fuel Cell Technologies	11:00 AM - 11:15 AM
275	A new Hybrid Perturb & Observe-Tianji's Horse Racing Optimization Algorithm for Enhancing PV Power Extraction Under Partial Shading Scenarios	11:15 AM - 11:30 AM
302	EV WIREFREE- Smart Dynamic Wireless Charging System for Electric Vehicles with Embedded AI and Gyro Sensors	11:30 AM - 11:45 AM
316	Automated I-V Tracer Circuit for Inspection of Bypass Diodes in Photovoltaic Module	11:45 AM - 12:00 PM
355	Techno-Economic and Simulation-Based Assessment of Energy Storage Systems for Residential and Utility-Scale Solar Applications: A Case Study of Jalgaon City, India	12:00 PM - 12:15 PM

Track 2 - Computing, AI & Data Science - Session I (Parallel)

10:45 AM - 12:30 PM • 6 presentations × 15 min • in parallel with Track 1

PAPER ID	PAPER TITLE	PRESENTATION TIME
148	Solar irradiation forecasting using CNN-LSTM: A hybrid model	10:45 AM - 11:00 AM
180	Multi-Modal Wavelet Scalogram Fusion for Deep CNN-Based Capacitance Estimation	11:00 AM - 11:15 AM
205	Performance Enhancement of a DC-DC Boost Converter Using TD3-Based Reinforcement Learning Control	11:15 AM - 11:30 AM
259	MetaphorMind: Cross-Lingual Metaphor Detector and Interpreter	11:30 AM - 11:45 AM
304	Circuit Copilot: An AI-Based Assistant for Understanding Hand-Drawn Circuit Diagrams	11:45 AM - 12:00 PM
322	An Iterative Improved Framework for Severity Prediction and Aerosol Classification in Solar Photovoltaic Plants Using Integrated Deep Learning Fuzzy Logic and Predictive Control Process	12:00 PM - 12:15 PM

Track 1 - Renewable Energy & Storage - Session II (Parallel)

2:45 PM - 4:15 PM • 5 presentations × 15 min • in parallel with Track 2

PAPER ID	PAPER TITLE	PRESENTATION TIME
470	Comparative Analysis of LSTM based Day-Ahead Scheduling of Energy Storage Integrated Grid Connected Microgrid	2:45 PM - 3:00 PM
506	A Novel SOC Based Control Algorithm for Enabling V2G and G2V Modes of Operation in EV Charging Station	3:00 PM - 3:15 PM

IMPORTANT NOTICE TO AUTHORS & PRESENTERS

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Track 1 - Renewable Energy & Storage - Session II (Parallel)

2:45 PM - 4:15 PM • 5 presentations × 15 min • in parallel with Track 2

PAPER ID	PAPER TITLE	PRESENTATION TIME
522	Fast and Cost-Effective Cell Balancing for Lithium-Ion Batteries using a Single DC-DC Converter	3:15 PM - 3:30 PM
532	Energy Management of a Solar/Wind/Second-life Battery Integrated System with SOH Estimation	3:30 PM - 3:45 PM
537	Generation Scheduling of Power System with Thermal Power Plants, Electric Vehicles and Solar-powered Batteries with a Novel Cost function of Batteries	3:45 PM - 4:00 PM

Track 2 - Computing, AI & Data Science - Session II (Parallel)

2:45 PM - 4:30 PM • 6 presentations × 15 min • in parallel with Track 1

PAPER ID	PAPER TITLE	PRESENTATION TIME
388	Design of Power Efficient CNN Accelerator on FPGA	2:45 PM - 3:00 PM
449	Comparative SOC Estimation for Li-Ion Batteries Using NN, 1D-CNN, and LSTM on Public Cycling Data	3:00 PM - 3:15 PM
540	Machine Learning-Based Reliability Improvement of a PSFB DC-DC Converter for Electric Vehicle Fast Charging	3:15 PM - 3:30 PM
742	An OCPP Simulation Framework for Security Evaluation of EV Charging Infrastructure	3:30 PM - 3:45 PM
810	Hybrid Kalman-Machine Learning Framework for Fault Detection and Isolation in Lithium-Ion Battery Systems	3:45 PM - 4:00 PM
821	A Swarm Intelligence Assisted Neural Network based Maximum Power Extraction Strategy for Solar PV Applications with Resistive Loading	4:00 PM - 4:15 PM

Day 2 - Saturday, 05 September 2026**Track 3 - Renewable Energy & Storage (Parallel)**

9:00 AM - 10:45 AM • 6 presentations × 15 min • in parallel with Track 4 and the PDW Panel Discussion

PAPER ID	PAPER TITLE	PRESENTATION TIME
669	Advance Nuclear Energy System for Sustainable Transportation: Evaluating Nuclear Batteries as the Future of Electric Vehicles	9:00 AM - 9:15 AM
794	Defect-Tolerance Analysis of ZnO Nanorod Electron Transport Layers in Perovskite Solar Cells	9:15 AM - 9:30 AM
803	Hybrid Optimization of Thermal and Battery Management for Enhanced EV Efficiency using ML Algorithms	9:30 AM - 9:45 AM
809	Field Data Analysis of Harmonic Distortion in Public PV-EV Charging Stations	9:45 AM - 10:00 AM
819	Optimization of Grid-Tied Photovoltaic Inverters Using TLBO, HHO, and Upgraded Addax Algorithm for Remote Areas	10:00 AM - 10:15 AM
824	Intelligent EV Battery Charging and Power Management in a DC Microgrid	10:15 AM - 10:30 AM

Track 4 - Power Electronics & Control - Session I (Parallel)

9:00 AM - 10:45 AM • 6 presentations × 15 min • in parallel with Track 3 and the PDW Panel Discussion

PAPER ID	PAPER TITLE	PRESENTATION TIME
823	Next Generation Electrical Machines for Automotive Traction Applications Part I: 2-Wheeler and 3-Wheeler Vehicles	9:00 AM - 9:15 AM
281	An Enhanced Control Strategy for Glitch-Free Mode Transition in Multi-Mode Power Electronic Converters	9:15 AM - 9:30 AM

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Track 4 - Power Electronics & Control - Session I (Parallel)

9:00 AM - 10:45 AM • 6 presentations × 15 min • in parallel with Track 3 and the PDW Panel Discussion

PAPER ID	PAPER TITLE	PRESENTATION TIME
370	Hybrid AC/DC Transmission Architectures for Clean Energy Transition	9:30 AM - 9:45 AM
451	Review of Control Strategies in Mathematically Modelled Electric Vehicle Motors	9:45 AM - 10:00 AM
697	Mitigation of Power System Oscillations in Multimachine Networks During Transient States Using a Hybrid Fuzzy Logic and Neural Network-Based Power Flow Controller	10:00 AM - 10:15 AM
777	Normalized Modeling and Optimal Design of SPS-Controlled Dual Active Bridge Converter	10:15 AM - 10:30 AM

Track 4 - Power Electronics & Control - Session II (Parallel)

3:45 PM - 4:45 PM • 3 presentations × 15 min • in parallel with Track 5

PAPER ID	PAPER TITLE	PRESENTATION TIME
550	Modelling and Simulation of an Intelligent Phase-Shift Controlled Isolated DC-DC Converter with Machine Learning-Based Fault Detection and Charging Mode Optimization	3:45 PM - 4:00 PM
528	A Closed-Loop Control Strategy for Robust Operation of the Dual Active Semi-Bridge Converter	4:00 PM - 4:15 PM
529	Hybrid Covariance-Guided ABC-NSGA-II for Multi-Objective Transformer Design Optimization with Finite Element Analysis Validation	4:15 PM - 4:30 PM

Track 5 - Electronics & Embedded Systems (Parallel)

3:45 PM - 5:00 PM • 4 presentations × 15 min • in parallel with Track 4 (Session II)

PAPER ID	PAPER TITLE	PRESENTATION TIME
199	Impact of Model Complexity on Optimization-Based Control Strategies for Residential Battery Energy Storage Systems	3:45 PM - 4:00 PM
807	Supercapacitor based TMS pulse generator design - Analysis of pulse shaping capability	4:00 PM - 4:15 PM
826	Energy-Efficient JFET-Based Neuron-Like Signal Generator for Low-Power Neuromorphic Systems	4:15 PM - 4:30 PM
273	Co-simulation of Real and Virtual ECUs for Left Shifting	4:30 PM - 4:45 PM

Day 3 - Sunday, 06 September 2026**Track 6 - Emerging Tech & Interdisciplinary - Session I (Parallel)**

10:45 AM - 12:00 PM • 4 presentations × 15 min • in parallel with Track 7

PAPER ID	PAPER TITLE	PRESENTATION TIME
184	Remaining Life Time Estimation of Power Transformers	10:45 AM - 11:00 AM
301	Design and Implementation of an Autonomous Medical Observation & Remote Assistant	11:00 AM - 11:15 AM
602	Design and Simulation of a Robust Open-Loop Flyback Converter with an Intermediate Voltage Rail for Portable Medical Devices	11:15 AM - 11:30 AM
762	Smart Grid Shield: IoT-Based Embedded System for Electricity Theft Detection	11:30 AM - 11:45 AM

Track 7 - Power & Energy Systems - Session I (Parallel)

10:45 AM - 12:45 PM • 7 presentations × 15 min • in parallel with Track 6

PAPER ID	PAPER TITLE	PRESENTATION TIME
208	Experimental Assessment of the Performance of a Rotationally Asymmetrical Concentrator Based Solar Window with Time	10:45 AM - 11:00 AM

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Track 7 - Power & Energy Systems - Session I (Parallel)

10:45 AM - 12:45 PM • 7 presentations × 15 min • in parallel with Track 6

PAPER ID	PAPER TITLE	PRESENTATION TIME
216	Assessing the Societal Benefit of Hosting Capacity Flexibility: A Case Study of the Brazilian Market	11:00 AM - 11:15 AM
274	FPGA Based SPWM Controller for Five-Level Inverter	11:15 AM - 11:30 AM
789	Control of a Three-Phase Grid-Connected Voltage Source Inverter Using a dq-Frame Current Estimator	11:30 AM - 11:45 AM
806	Comparative Evaluation of Front-End Converter Topologies for Supraharmonic Emission Reduction in Low-Voltage Grids	11:45 AM - 12:00 PM
227	AI-Optimised Hybrid Flywheel-Hydrogen Fuel Cell System for Grid Frequency Stabilization in Sub-Saharan Power Networks	12:00 PM - 12:15 PM
593	Optimal Placement of Electric Vehicle Charging Stations with Distributed Generation in Distribution Networks: A Comprehensive Review	12:15 PM - 12:30 PM

Track 6 - Emerging Tech & Interdisciplinary - Session II (Parallel)

4:00 PM - 5:15 PM • 4 presentations × 15 min • in parallel with Track 7

PAPER ID	PAPER TITLE	PRESENTATION TIME
782	Real-Time Vision-Based Multi-Zone Automatic Load Control Using Raspberry Pi for Indoor Energy Management	4:00 PM - 4:15 PM
784	Time-Dependent Degradation and Risk Evolution in Utility-Scale Photovoltaic Systems: Evidence From Long-Term Operational Data	4:15 PM - 4:30 PM
827	A Critical Analysis of Energy Harvesting and Intelligent Energy Management in Wireless Sensor Networks with a Value-Aware Decision Model	4:30 PM - 4:45 PM
387	A Comprehensive Analysis of Cybersecurity Requirements for Electric Vehicles and Charging Infrastructure	4:45 PM - 5:00 PM

Track 7 - Power & Energy Systems - Session II (Parallel)

4:00 PM - 5:30 PM • 5 presentations × 15 min • in parallel with Track 6

PAPER ID	PAPER TITLE	PRESENTATION TIME
818	Containerized SCADA Testbed for Supervisory Cybersecurity Analysis in Power System Infrastructure	4:00 PM - 4:15 PM
610	Reviving Legacy Brushless Exciter After Severe High Speed Rotating Rectifier System Damage of 120 MW Turbine Generator - A Case Study	4:15 PM - 4:30 PM
207	Impact of the Reactive Power Control Modes of Wind Parks on the Power Systems Voltage Stability	4:30 PM - 4:45 PM
531	The role of synchronous condensers in power systems dominated by inverter-based resources	4:45 PM - 5:00 PM
121	Comparative Analysis of Heterogeneous Grid-Forming Inverters in Islanded Microgrid Operation	5:00 PM - 5:15 PM

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