



BHUBANESWAR
ICPEE 2025

**IEEE International
Conference on Power
Electronics and
Energy (ICPEE 2025)**



Special Session 02 (SS 02)

SS 02: Artificial Intelligence and Optimization Techniques in Power Electronics and Energy Systems

Organized and co-chaired by:

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Call for Papers

Technical Outline of the Session:

This special session aims to bring together researchers, academicians, and industry experts to explore the integration of artificial intelligence (AI), machine learning (ML), and meta-heuristic optimization techniques in the domain of power electronics and energy systems. With the rising complexity in energy demand, grid integration of renewable sources, electric vehicles, and smart grids, conventional modeling and control methods are being complemented and, in some cases, replaced by intelligent techniques that offer robustness, adaptability, and enhanced performance.

The session will highlight current research trends, real-world applications, and the challenges faced in AI-based modeling, prediction, fault detection, system control, and optimization in power and energy sectors.

Topic of the Session includes, but are not limited to:

- (i) AI/ML applications in power electronic converters and controllers
- (ii) Optimization techniques for energy management in smart grids
- (iii) Forecasting of solar and wind energy using AI models
- (iv) Condition monitoring and predictive maintenance of renewable systems.
- (v) Intelligent fault diagnosis in power electronic circuits.

Important Dates:

Special Session Paper Submission Due Date: 15.08.2025

Notification of Paper Acceptance Date: 31.08.2025

Camera Ready Paper Submission Due : 15.10.2025

Author guidelines areas per regular paper submission

IEEE Template

Submission Portal

<https://icpee.kiit.ac.in/special-sessions/>

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