



2025 IEEE 4th International Conference

on

Smart Technologies for Power, Energy and Control (STPEC 2025)

December 10-13, 2025

Department of Electrical and Electronics Engineering,
National Institute of Technology Goa, Goa, India



Special Session 05 (SS05)

Advanced AI and Cybersecurity Applications in Renewable Energy and Electric Mobility

Organized and co-chaired by:

- Dr. Mukesh Singh, TIET Patiala, Punjab, India
- Dr. Amit Kumar, TIET Patiala, Punjab, India

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Call for Papers

• Technical Outline of the Session:

The global shift toward sustainable energy and transportation is accelerating the adoption of renewable sources and electric vehicles (EVs), transforming modern power grids and urban infrastructure. While offering cleaner and more efficient alternatives, this transition brings challenges such as complex integration, system interoperability, and increased cyber risks. The intersection of renewable energy, electric mobility, AI, and cybersecurity calls for intelligent, adaptive, and secure solutions. AI and machine learning are key enablers for optimizing energy generation, distribution, and usage, while strong cybersecurity measures are essential to safeguard the integrity of these interconnected systems. This special session invites researchers, industry professionals, and policymakers to share insights and advancements in AI-driven approaches and cybersecurity frameworks that support the future of clean energy and electric transportation.

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

- AI and Machine Learning in Renewable Energy Systems
- Smart grid optimization through dynamic load balancing
- Electric Vehicles and Intelligent Charging Infrastructure
- AI-based route planning and charging station optimization
- Cybersecurity for Energy and EV Networks
- Intrusion detection and mitigation strategies in smart grids and EV platforms
- AI for Monitoring, Diagnostics, and Fault Management
- Integrated Energy and Mobility Systems
- Policy, Governance, and Ethical Considerations

• Important Dates:

- Special Session Paper Submission Due : June 15, 2025
- Notification of Paper Acceptance : July 31, 2025
- Camera Ready Paper Submission Due : August 31, 2025
- Regular Registration Due : October 30, 2025

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