IEEE 6th International Conference
on
Sustainable Energy and Future Electric Transportation (SEFET 2026)

8th to 11th July 2026

Call for Research Papers: SS16

AI-Enabled Power Electronics for Sustainable Energy and Transportation (APSET)

Brief Description

This special session focuses on the integration of artificial intelligence techniques with advanced power electronic systems to enhance efficiency, reliability, and intelligence in modern energy and transportation infrastructures. The session highlights AI-driven control, optimization, fault diagnosis, and predictive maintenance in applications such as renewable energy systems, electric vehicles, smart grids, and energy storage technologies. By bridging power electronics with data-driven and intelligent algorithms, this session aims to showcase cutting-edge research and practical solutions that support the global transition toward sustainable, resilient, and low-carbon energy and transportation systems.

Topic of the session includes, but are not limited to

- Modeling and Control of Power Electronic Converters
- Machine Learning Techniques for Converter Design and Optimization
- Intelligent Control of Grid-Connected Inverters and Microgrids
- AI-Enabled Power Management in Renewable Energy Systems
- Smart Power Electronics for Electric and Hybrid Electric Vehicles
- Predictive Maintenance and Fault Diagnosis of Power Electronic Systems
- AI-Assisted Power Quality Enhancement and Harmonic Mitigation
- Intelligent Wide Bandgap (SiC/GaN) Power Devices and Applications
- Cyber-Physical Security and AI in Smart Energy and Transportation Systems
- Real-Time Embedded AI Implementation for Power Electronic Applications
- AI for Sustainable Charging Infrastructure and V2G Technologies
- Case Studies and Industrial Applications of AI in Power Electronic

Last Date to submit: 31.01.2026

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All the accepted and presented papers will be published in the IEEE Xplore Digital Library.
All presented papers will be considered for further review and possible publication in the IEEE Transactions on Industry Applications and IEEE Industry Applications Magazine.

Submission Procedure: https://cmt3.research.microsoft.com/SEFET2026/Submission/Index
Paper Template: https://www.ieee.org/conferences/publishing/templates