

AI-Assisted Energy Conversion Systems for Green Hydrogen and Electric Transportation

Organizers:

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SESSION SUMMARY:

The Special Session on “**AI-Assisted Energy Conversion Systems for Green Hydrogen and Electric Transportation**” aims to bring together researchers, engineers, and industry experts working on advanced artificial intelligence techniques applied to modern energy conversion systems. The section focuses on innovative solutions that improve the efficiency, reliability, intelligence, and sustainability of power electronic systems used in green hydrogen production and electric transportation applications.

This Session seeks to highlight recent advances in AI-based modeling, control, optimization, monitoring, and energy management for renewable-energy-integrated systems, hydrogen technologies, and electric mobility infrastructures. It also aims to promote interdisciplinary collaboration between academia and industry in support of clean energy transition and carbon-neutral transportation.

Suggested Topics of Interest

- Potential topics include, but are not limited to:
- AI-based control of power electronic converters ;
- Intelligent energy management systems ;
- Green hydrogen production and storage ;
- Renewable-energy-powered electrolyzers ;

- Electric vehicle charging infrastructures ;
- Smart grids and microgrids ;
- Machine learning for energy optimization ;
- Predictive maintenance and fault diagnosis ;
- Wide-bandgap semiconductor applications ;
- Battery management systems ;
- Hybrid renewable energy systems
- Real-time monitoring and automation
- Sustainable transportation technologies