8th Global Power, Energy and Communication Conference

Naples/ITALY

June 3-5, 2026

Special Session on

AI-Driven Hydrogen Production for Powering EV Charging Infrastructure

The rapid growth of electric vehicles (EVs) is raising important issues in power systems, especially for high-powered and fast-charging situations. Green hydrogen provides a flexible and virtuous solution for EV charging infrastructures, where energy is stored at large scale and renewable energies are optimally integrated. However, the operation of hydrogen-based energy systems is challenging because of high fluctuation of renewables and dynamic EV charging load.

The special session will highlight AI techniques for hydrogen production and management of energy in EV charging infrastructures. State-of-the-art methods such as machine learning, deep learning and reinforcement learning are investigated to achieve optimized electrolyzer operation, system efficiency improvement, intelligent charging strategies and grid optimization. This session will provide an opportunity for researchers and practitioners to share the latest breakthroughs, successful applications in practice and future research trends on AI-empowered hydrogen energy system for sustainable EV charging.

Topics of interest include, but are not limited to:

- AI-based control and optimization of hydrogen electrolyzers
- Renewable-powered hydrogen production for EV charging stations
- Intelligent energy management of hydrogen–EV–grid integrated systems
- Machine learning and reinforcement learning for EV charging scheduling
- Hydrogen storage modeling, sizing, and optimization using AI
- Power electronics and converters for hydrogen-based EV infrastructure
- Smart charging strategies combining hydrogen, batteries, and renewables
- Digital twins and data-driven modeling for hydrogen energy systems
- Techno-economic and environmental assessment of AI-driven hydrogen solutions
- Grid-support services and flexibility provision via hydrogen-powered EV charging
- Cybersecurity, reliability, and resilience of AI-based hydrogen energy systems

Organizer(s):

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Deadlines of the special session:

Full paper submission (maximum 6 pages):	**March 15, 2026**
Notification of acceptance:	**April 12, 2026**
Final submissions due:	**April 26, 2026**

All the instructions for paper submission are included at the conference website.
https://gpecom.org/2026/guidelines/