

Call for Papers for the Special Session on

Generative Advance Techniques for Communication Tied Resilient Power and Energy Networks

Organized and co-chaired by

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Technical Outline of the Session and Topics

Powered and energy networks, including sustainable energies, electrified transportation systems, autonomous to grid tied energy community platforms, and inter linked power networks, are central to achieving global carbon-neutrality targets. These networks operate in highly dynamic, distributed, and often safety-critical environments, where resilience, reliability, and secure operation are essential. This special session focuses on advanced power and energy-management, control, optimization, and communication frameworks that enable resilient and carbon-neutral powered networks. Emphasis is placed on integrating power electronics, intelligent control techniques, cyber-resilience, and grid interaction to ensure stable operation under uncertainty, disturbances, and cyber threats. The session aims to bridge theory, practical deployment, and emerging standards for next-generation resilient power and energy ecosystems. This special session invites contributions that address state-of-the-art methodologies, practical deployment challenges, and policy developments that enable resilient, sustainable, and secure powered ecosystems.

Topics of the session include, but are not limited to:

- Advanced optimization and adaptive control methods for resilient powered network operations.
- Energy-management strategies for EVs within carbon-neutral mobility architectures.
- Control and optimization of electric propulsion system for marine, aircraft, & spaceborne platforms.
- Standards, regulations, & policy frameworks supporting carbon-neutral & resilient power networks.
- Design and control techniques that enhance power-network stability in electrification systems.
- Optimization under uncertainty for planning and operating powered networks.
- Communication-resilient architectures and low-latency coordination for energy community system.
- Cyber-resilience, detection with secure operation of electrified vehicles and mobile power assets.
- Anomaly detection and health monitoring across ground, marine, and electric vehicles.
- Vehicle-to-grid (V2G) and mobile-to-grid (M2G) integration for energy and frequency support.

Timeline for Authors

All the instructions for paper submission are available on the conference website. Please visit www.iecon2026.org or scan the QR code for the timeline.

