

Special Issue

Advanced Energy Management Systems and Power Electronic Solutions for the Next-Generation Smart Grid

Message from the Guest Editors

This Special Issue aims to bring together recent innovations and research efforts that lie at the intersection of energy management systems (EMS) and power electronic technologies within the context of smart grid applications. We welcome original research articles, reviews, and case studies that focus on novel architectures, algorithms, hardware implementations, and control strategies that support a resilient, adaptive, and secure smart grid. Topics of interest include, but are not limited to, the following:

- Intelligent EMS for decentralized and centralized smart grids;
- Coordinated control of DERs, microgrids, and virtual power plants (VPPs);
- Integration of EVs and battery energy storage systems (BESS) into the grid;
- Grid-connected converters, inverters, and solid-state transformers;
- Power electronic interfaces for renewable energy systems (PV, wind, fuel cells);
- Real-time simulation, digital twins, and hardware-in-the-loop (HIL) platforms;
- Predictive and adaptive control methods using AI and machine learning;
- Cyber-physical security and fault-resilient EMS in power-electronic-dominated grids.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

Editor-in-Chief

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