

Special Issue

Modeling and Intelligent Control for Microgrids and Smart Grids

Message from the Guest Editors

Microgrids (MGs) and smart grids (SGs) are evolving toward more sustainable, flexible, and resilient power systems through the integration of renewables, distributed generation, energy storage, and smart energy services. This transformation requires advanced control, communication, and data-driven methods, while still presenting open challenges. This Special Issue focuses on recent advances in the theory, modelling, and applications of MGs and SGs. Topics of interest include, but are not limited to, the following:

- Power electronic converter designs and protection schemes for microgrids and smart grids
- Modelling, parameter identification, and stability analysis of microgrid and smart grid systems
- Decentralized and distributed control, observer, and estimation methods across all control levels
- Learning-based and neural-network methods for system modelling, prediction, control, and energy management
- Power quality improvement, advanced energy services, and control strategies under special operating conditions
- Communication technologies, plug-in services (e.g., vehicle-to-grid), and their impact on system stability and operation

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About the Journal

Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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