



*energies*



an Open Access Journal by MDPI

## Advances in Control System for Power Electronics, Microgrids, and Smart Grids

Guest Editors:

**Dr. Kambiz Tehrani**

Clermont Auvergne INP, CNRS,  
Institut Pascal, University of  
Clermont Auvergne, F-63000  
Clermont-Ferrand, France

**Prof. Dr. Serge Pierfederici**

Electrical Energy Management,  
Laboratory of Energies  
Theoretical and Applied  
Mechanics, University of Lorraine,  
2 Avenue de la Forêt de Haye,  
54518 Vandoeuvre-lès-Nancy,  
CEDEX, France

Deadline for manuscript  
submissions:

**closed (6 March 2026)**

### Message from the Guest Editors

Dear Colleagues,

The focus of this Special Issue is on the challenges faced and advantages offered by the seemingly inevitable shift from the existing traditional supply–demand model (characterized by centralized remote bulk power generation, long transmission lines, unidirectional power flow at distribution level from the producer (grid) to consumer (customer), irresponsive loads, separate energy carriers, and the low penetration of renewable energy sources) to the new pattern (characterized by distributed generation close to the point of use, bidirectional power flow in distribution feeders, controllable/responsive loads such as plug-in electric vehicle chargers, thermal loads and air conditioning systems, integrated energy carriers, and the very high penetration of renewable energy sources).

This Special Issue is devoted to the various advanced real-time control methods intended for application alongside micro and smart grids. In addition, research targeting novel technologies, new configurations of hybrid micro grids (AC and DC), V2G technologies, new challenges and advanced controllers are welcome.

Dr. Kambiz Tehrani  
Prof. Dr. Serge Pierfederici  
*Guest Editors*



[mdpi.com/si/198705](https://mdpi.com/si/198705)

# Special Issue



# energies



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Enrico Sciubba**

Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

## 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.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), Ei Compendex, RePEc, Inspec, CAPlus / SciFinder, and other databases.

**Journal Rank:** CiteScore - Q1 (Control and Optimization)

## Contact Us

---

*Energies* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/energies](http://mdpi.com/journal/energies)  
[energies@mdpi.com](mailto:energies@mdpi.com)  
[X@energies\\_mdpi](https://twitter.com/energies_mdpi)