

## Special Issue

# Modelling, Analysis and Control of AC/DC Power Systems with High Penetration of Renewable Energy

### Message from the Guest Editors

At present, large-scale renewable energy and HVDC are integrated into the power system and the penetration of renewable energy has been increasing year by year. As a result, the nonlinear characteristics of renewable energy and HVDC increase the difficulty of performing modelling analysis and controlling AC/DC power systems. Furthermore, the fluctuation, intermittency and vulnerability properties of renewable energy may increase the risk of the instability of AC/DC power systems. In order to discuss the key technologies and issues related to AC/DC power systems with high penetration of renewable energy in modelling, analysis and control, we invite experts and scholars to submit papers discussing the latest academic and technological achievements. Topics to be covered in this Special Issue include, but are not limited to, the following:

- Modelling of AC/DC power systems;
- Optimal control method for power systems;
- Frequency regulation techniques for power systems;
- Wide-band frequency oscillation analysis for AC/DC power systems;
- Power quality improvement technique for AC/DC power systems.

---

### Guest Editors

Dr. Shilin Gao

Dr. Zongsheng Zheng

Dr. Jianquan Liao

---

### Deadline for manuscript submissions

15 September 2025



## Energies

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.2  
CiteScore 7.3



[mdpi.com/si/203946](https://mdpi.com/si/203946)

*Energies*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[energies@mdpi.com](mailto:energies@mdpi.com)

[mdpi.com/journal/  
energies](https://mdpi.com/journal/energies)





# Energies

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.2  
CiteScore 7.3



[mdpi.com/journal/  
energies](https://mdpi.com/journal/energies)



## 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.

---

### Editor-in-Chief

Prof. Dr. Enrico Sciubba

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

---

### 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)