

## Special Issue

# Integration Renewable Energy Sources and Electric Vehicles into the Electric Power Grid: Progress, Impact and Challenges

### Message from the Guest Editors

This Special Issue is dedicated to investigating the converters, control, and impact of RESs and EV integration into the electric power grid. Original research papers that emphasize recent advancements on converter topologies, control techniques, multifunctional control of grid-connected converters, impacts of RESs and EVs penetration on the electric power system and power quality in the context of grid integration of RESs and EVs are welcome. Original research on the design, analysis, and impact of RESs integrated EV charging stations and Review papers and studies that include recent advancements and detailed comparisons of RESs' and EVs' grid integration are welcome.

**Keywords:** Grid integration of RESs; Solar photovoltaic; Wind energy conversion system; Converter topologies; Maximum Power Point Tracking; Converter control techniques; Adaptive control algorithms; Fractional order control algorithms; Artificial intelligence applications; Coordinated control of hybrid RESs; Multilevel converters; RESs integrated electric vehicle charging station; Battery storage; Battery charging; Wide band gap device applications in RESs and EVs; Large scale RESs grid integration

---

### Guest Editors

Dr. Manoj Badoni

Department of Electrical and Instrumentation Engineering, Thapar Institute of Engineering and Technology, Patiala 147001, India

Dr. Rajeev Kumar

Electrical and Electronics Engineering Department, KIET Group of Institutions, Meerut Road-201206, Ghaziabad, Uttar Pradesh, India

---

### Deadline for manuscript submissions

closed (15 May 2023)



## Energies

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.2  
CiteScore 7.3



[mdpi.com/si/104434](https://mdpi.com/si/104434)

*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)