Special Issue

Advancements in Electric Vehicle Charging for Renewable Energy Integration: Solutions and Power Electronics

Message from the Guest Editors

The electrification of transport is accelerating, with EVs emerging not only as low-emission vehicles but also as potential grid assets through advanced charging technologies and vehicle-to-grid (V2G) solutions. This Special Issue will focus on recent breakthroughs and emerging solutions at the intersection of EV charging infrastructure, renewable energy integration, and power electronic systems. It aims to compile cutting-edge research and practical innovations that enhance system efficiency, flexibility, and reliability, while supporting a cleaner and smarter energy future. Potential topics include intelligent EV charging strategies, bidirectional power flow, converter technologies, grid support functionalities, and energy management systems involving coordination across vehicles, renewables, and storage systems. We invite contributions that address the technical, operational, and economic aspects of EV charging solutions and their role in enabling the development of renewable-based energy systems.

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Deadline for manuscript submissions

25 December 2025

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/246117

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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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