

## Special Issue

# Advanced Grid-Connected PV Inverters and AC–AC Converters for Dynamic Grid Voltage Compensation and Stability

### Message from the Guest Editor

As electricity demands grow and environmental concerns mount, the need for photovoltaic (PV) power is escalating. For grid-connected PV inverters, priorities include reducing DC current, total harmonic distortion (THD), common-mode leakage current, and other critical factors. The fluctuating availability of solar power and changing load conditions can trigger substantial grid voltage disturbances and degrade power quality. To overcome these, it's vital to advance power electronics converter technology for efficient PV power management and reliable grid voltage control. This Special Issue will delve into the latest advancements in grid-connected power electronics, with a spotlight on DC–AC inverters for PV systems and AC–AC converters for grid voltage regulation. We invite contributions on advanced control strategies, innovative circuit designs, power quality improvements in PV-integrated grids, energy management and storage for PV systems, synchronization techniques, fault-tolerant PV inverter operations, AC–AC converter design for voltage regulation, and the role of FACTS devices in enhancing grid power quality.

### Guest Editor

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### Deadline for manuscript submissions

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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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