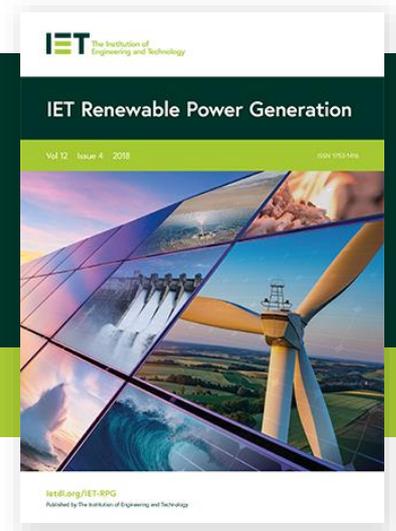


IET Renewable Power Generation Call for Papers

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Editor-in-Chief: David Infield, University of Strathclyde, UK
Special Issue on:

Advanced Trends of Control Topologies for the Integrated PV Systems: Development, Challenges and Opportunities

Problems associated with fossil fuels consumption for electric power generation has created considerable attention in seeking alternative renewable energy systems. Photovoltaic (PV) systems are the technological symbol for a future sustainable energy supply system in many countries. A considerable amount of money is invested in research, development and demonstration, and several governments have set up substantial market introduction programs with industrial investment. However, PV electricity is also regarded as expensive when compared to conventional grid electricity.

The main challenge in PV system research is to investigate the high-efficiency operation with advanced trends of control strategies. A typical PV system is composed of solar cells, an energy storage system, a power electronic converter and a control system. The solar PV system can be connected either to stand-alone loads or the utility grid. To improve the conversion efficiency and reduce the cost of energy production, a variety of PV system technologies have been developed over the past decades. These technologies have considered the materials and characteristics of the cells, their location, the current challenges associated with energy storage systems, current application challenges of power electronics in the control systems of solar PV moduls, and the target of operation under maximum power extraction strategy.

The special issue welcomes research papers related to the high-efficiency operation of the integrated PV systems with advanced trends of control strategies.

Topics of interest include, but are not limited to:

- Overview of energy-efficient technologies for PV systems
- Innovation in energy efficiency techniques – an empirical analysis
- New efficient technologies of PV systems for optimal power generation
- Application of power electronics for PV systems
- Adaptive control algorithms of power electronics for the efficient operation of the integrated PV systems
- Dynamic behaviour enhancement of PV grid connection
- New methodologies of maximum power extraction
- Recent trends of grid-synchronization strategies for PV systems
- Reduction in operation and maintenance costs through control strategies
- Enhancing the lifespan of the PV system through better maintenance and improved materials
- Simulation tool, and data-driven design for manufacturing the PV system
- Hybrid Storage integration and combination

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