Call for Papers

CMP Chinese Journal of Electrical Engineering

Special Issue on Reliable and Smart Power Conversion Techniques for Renewable Energy

Scheduled Publication Time: September 2024

With the deeper penetration of renewable energy, as the link between renewable energy and the power grid, power converters are faced with more technical challenges. The number of power converters will be extremely high, whose reliability is essential for efficient, safe, and seamless integration of renewable energy into the existing power infrastructure, as well as saving substantial maintenance cost. There are several main approaches to enhance its reliability, such as advanced cooling and thermal management, fault detection and protection, advanced monitoring and sensing techniques. At the same time, with the fast development of artificial intelligence (AI), AI-enabled power converters have the potential to be smarter in many aspects, such as intelligent control, design optimization, and predictive maintenance. By making the power converters smarter, a higher efficiency, better performance, and improved reliability renewable energy systems could be achieved. Significant technological advancements have been achieved during recent years, yielding enlightened scientific and practical knowledge on this topic.

This special issue intends to collect and report the latest developments of reliable and smart power conversion techniques for renewable energy. Topics of interest include, but are not limited to:

- Reliability-oriented design and analysis for power converter
- Lifetime estimation and prediction
- Thermal management, cooling, heat sinking
- Converter-level multiphysics optimization
- Fault diagnosis and fault tolerant techniques
- Real-time and cost-effective condition monitoring of component and converter
- High-bandwidth high-robustness sensors
- Intelligent decision-making techniques
- Accurate data acquisition and processing
- Self-adaptive and model-predictive control of grid-tied power converters
- Autonomous design of component and control parameters
- Machine-learning based prognosis
- Digitalized power electronics in renewable energy integration

All manuscripts must be submitted through Manuscript Central at https://mc03.manuscriptcentral.com/cjee. Submissions must be clearly marked "**Reliable and Smart Power Conversion Techniques for Renewable Energy**" on the cover page. The information about manuscript preparation and requirements is provided on http://www.cjeecmp.com/EN/column/column334.shtml. Manuscripts submitted for the special issue will be reviewed separately and will be handled by the guest editorial board noted below.

Deadline for Submission of Manuscript: April 30, 2024

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Proposed Timeline:

- April 30, 2024 – Manuscripts Submission Deadline
- June 30, 2024 – Final Acceptance Notification
- July 31, 2024 – Manuscripts Forwarded to CJEE for Publication
- Sep. 30, 2024 – Special Issue Appears in CJEE