Special Issue

Smart Converters/Inverters for Microgrid Applications

Message from the Guest Editors

As the core device of the microgrid, the technological development of smart power converters faces several significant challenges. Firstly, there is a need to improve conversion efficiency and power density while reducing power losses and size. Secondly, it is essential to develop more intelligent and robust control algorithms. Furthermore, smart power converters must incorporate functions such as optimized energy management and coordinated control. Overcoming these technical challenges will drive continuous improvements in smart power converter performance and provide crucial support for achieving clean and efficient microgrid operations. This Special Issue is dedicated to collecting and sharing the latest research and the newest ideas on smart converters/ inverters for microgrid applications. Research areas include (but are not limited to) the following:

- Novel smart converter topologies;
- AI-enabled smart converters;
- Smart converters for Power-X systems;
- Multi-port smart converters/inverters;
- Digital twin technology for smart converters;
- Grid-forming control strategies;

We look forward to receiving your contributions.

Guest Editors

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Deadline for manuscript submissions

closed (15 April 2025)

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Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

Editor-in-Chief

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