

Special Issue

The Emerging Power Electronic Converter Topologies and Control Techniques for Sustainable Solutions

Message from the Guest Editors

The ever-increasing global energy consumption and impact of greenhouse gas (GHG) emissions on the environment have accelerated research into renewable energy sources (RES) with appropriate power converters and control for sustainable solutions. In recent years, the rapid development of new energy conversion systems has created a thrust among researchers to develop an efficient, redundant, high-power-density power electronics converter design and their controls to meet the current demands of the smart world. Power electronic converters should send power by regulating dc-dc or dc-ac to the electrical load and the utility grid. The performance of power electronic converters depends on interactions among sources, loads, and their state of operation. Power electronic converters should be operated with safety and stability under normal conditions, fault conditions, overloads, and different operation modes. Therefore, enhanced control strategies for power electronic converters are important to improve the reliability of renewable energy sources and the stability of the grid and the load.

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