



## Recent Advances in the Design and Control of Modern Power Electronic Interfaces for Renewable Energy Integration

Guest Editors:

### **Dr. Mohamed Trabelsi**

Electronics and Communications  
Engineering Department, Kuwait  
College of Science and  
Technology, Kuwait P.O. Box  
27235, Kuwait

### **Dr. Sertac Bayhan**

Qatar Environment and Energy  
Research Institute, Hamad Bin  
Khalifa University, Doha, Qatar

### **Dr. Andrii Chub**

Department of Electrical Power  
Engineering and Mechatronics,  
Tallinn University of Technology,  
19086 Tallinn, Estonia

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### **Message from the Guest Editors**

The modern liberalization of the energy market, however, has defined a new trend, shifting us toward decentralized generation, bidirectional power flow, active energy management at different nodes in the network, intelligent measurements and control, and optimized system efficiency. These are the key features for the realization of a flexible, intelligent, reliable, accessible, and economic network (smart grid).

This Special Issue aims to gather together the latest developments and allow researchers to share experiences in studying and developing emerging power electronic converters and control and design methods for the integration of renewable energies. Research areas may include (but are not limited to) the following:

- Artificial intelligence-based design and control of power converters;
- Active power decoupling;
- Transformerless inverters with a wide input voltage range;
- High step-up DC-DC converters;
- Advanced MPPT techniques;
- Fault detection and diagnosis;
- Fault-tolerant control;
- Advanced control with ancillary grid services;
- Islanding detection;
- Design and control of energy storage systems coordinated with renewable energy sources





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## Editor-in-Chief

### **Prof. Dr. Marc A. Rosen**

Faculty of Engineering and  
Applied Science, University of  
Ontario Institute of Technology,  
Oshawa, ON L1G 0C5, Canada

## Message from the Editor-in-Chief

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*Sustainability* Editorial Office  
MDPI, Grosspeteranlage 5  
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