

Special Issue

Stability Analysis, Control, and Optimization Techniques of Grid Forming Converters

Message from the Guest Editor

Grid-forming converters can address the grid-dependent deficiency of mainstream grid-following converters, thus enabling the safe and secure operation of modern power systems. However, grid-forming converters, characterized by nonlinear couplings among multiple control loops and limited overcurrent capability, face challenges in maintaining stable operation. Consequently, the widespread adoption of grid-forming converters is significantly hindered. This Special Issue focuses on the stability analysis, control and optimization techniques of grid-forming converters. The topics of interest include, but are not limited to, the following research areas:

- Modeling and model reduction of grid-forming converters;
- Dynamic behavior and stability analysis of grid-forming converters;
- Advanced grid-forming control schemes;
- Transient stability enhancement and current limiting methods of grid-forming converters;
- Synchronization of multiple grid-forming converters;
- Optimal control parameters and configuration of grid-forming converters in power systems;
- Hybrid operation of grid-forming converters, grid-following converters and synchronous generators.

Guest Editor

Prof. Dr. Jingyang Fang

School of Control Science and Engineering, Shandong University, Jinan 250061, China

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Electronics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
electronics@mdpi.com

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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

Prof. Dr. Flavio Canavero

Department of Electronics and Telecommunications, Politecnico di Torino, 10129 Torino, Italy

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