Special Issue

Power Electronics in Hybrid AC/DC Grids and Microgrids

Message from the Guest Editors

This Special Issue aims to focus on the existing and emerging challenges in hybrid AC/DC grids and microgrids pertaining to modeling, benchmarking, stability analysis, short-circuit fault analysis and protection, and controls. Specific topics of interest are as follows:

- Modeling of such systems with very high penetration of CIG that can capture recently observed phenomena like SSOs and validation of models through electromagnetic transient (EMT) simulations.
- Hybrid AC/DC grid and microgrid fault analysis and protection with very high CIG penetration.
- Small- and large-signal stability analysis of the system in the presence of a significant CIG penetration.
- New control approaches to solve challenges posed by traditional GFL technology in weak grid conditions as applied to the DC grid converters and CIGs.
- Application of grid forming (GFM) technology in DC grids and CIGs when interfaced with weak AC grids.
- Provision of ancillary support (like primary frequency support) through the DC grid and CIGs to the AC system including in microgrids.

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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 guest-edited by leading experts in selected topics of interest.

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