



Call for Papers

Special Section on Advanced Power Electronics Techniques for Smart Grid Applications

Submission date: July 21st, 2022 Publication date: December 2022

Motivation

The advent of modern power electronics has brought tremendous impact on emerging power systems. In an emerging smart grid, as the number of inverter- and converter-based devices increases to more than hundreds of thousands, it is rather intuitive that the state-of-the-art technical solutions and industry practices will no longer be sustainable. The combination of power electronics and advanced control technologies serve as the key enabler of a wide range of smart grid applications. While tremendous progress has been made in advancing the standalone power electronics technologies, much less attention has been paid to bridging the gap between traditionally disjoint research areas – power electronics, power systems, and intelligent control – ultimately facilitating the vision of 100% carbon-neutral energy systems come to fruition. There is a growing interest in the concepts of power electronics-enabled power systems around the world. The proposed Special Section (SS) invites a broad spectrum of contributors (e.g., academics, researchers, engineers, consultants, market regulators and system operators, key policymakers) to define and develop the interdisciplinary technical approaches collectively. The SS solicits original research papers that target at, but are not restricted to, the following topics. It is worth noting that this SS places an emphasis on addressing the mutual research interests of academics and industry. Hence, interdisciplinary research and real-world-problem-driven research topics are of particular interest of this SS. Submissions from industry are highly encouraged.

- Grid integration of grid-forming converters/inverters for smart grid applications.
- Modeling, simulation, analysis, and experiment of power electronics components for smart grid applications.
- Novel power electronics applications to support high penetration of distributed renewable resources.
- Reliability, resilience, and stability study of power electronic converters for smart grid applications.
- Testbed, proof-of-concept demonstrations, pilot projects, and real-world implementation.
- New business models and economic analysis of power-electronics-enabled distribution networks.
- Innovative education and training activities for promoting emerging power electronics technologies and developing a pipeline of future power electronics engineers.

The Publication Fees/Article Processing Charges (APCs) for the accepted papers will be completely subsidized by the CAS Society. Hence these publications will be completely free of charge to the authors.

Publication Schedule

Manuscript submission deadline	July 21st, 2022
First-round revision notification due	September 6th, 2022
Revised manuscripts due	September 27th, 2022
Second-round revision notification due	October 25th, 2022
Final manuscript due	November 22nd, 2022
Online publication	December 2022

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Instructions for authors: Manuscripts must be submitted online using the IEEE OJCAS Manuscript Template via Manuscript Central at: <https://mc.manuscriptcentral.com/oj-cas> During submission, the answer to question “Type” in Step 1 of the submission process, is “power electronics”.

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