Special Issue

Stability Analysis and Optimal Operation in Power Electronic Systems

Message from the Guest Editors

Power electronics technology has become increasingly adopted in power, energy, and communication systems over recent decades, enhancing efficiency, power density, controllability, flexibility, and power quality. Unlike traditional energy conversion systems based on electric machines, power electronic converters introduce complex control dynamics that often lead to stability issues across wide frequency ranges and timescales, which is a critical challenge in power electronic systems. Addressing this challenge demands improved stability, reliability, and intelligence in power electronic technology. In this Special Issue, original research articles and reviews are welcome. Research areas may include (but are not limited to) the following: (1) Advanced modeling methods for power electronic systems. (2) Small-signal stability analysis of power electronic systems. (3) Large-signal stability analysis of power electronic systems. (4) Stability enhancement and power quality improvement for power electronic systems. (5) Optimal design methods for power electronic converters and systems. (6) Advanced control strategies of power electronic converters and systems.

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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

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