Special Issue

Advanced Control Techniques for Power Electronics in Modern Energy Systems

Message from the Guest Editors

This Special Issue focuses on topics of interest include, but are not limited to, the following:

- **Multi-resonant and adaptive controllers** for grid-connected and standalone converters.
- **Predictive and nonlinear control strategies** for high-performance power conversion.
- **Advanced feed-forward and multi-loop control techniques** for improved dynamic response.
- **Grid-forming and grid-following inverter control** for enhanced power quality and stability.
- **Scalability and thermal management considerations** in high-power applications.
- **Machine learning and AI-based controllers** for real-time power conversion optimization.
- **Control techniques for hybrid energy storage and power management** in complex systems.
- **Experimental and comparative studies of advanced controllers**, such as **multi-resonant, PI, MPC, and adaptive control** in power electronic systems.
- **Control strategies for Power-to-X (P2X) systems**, including hydrogen production and energy conversion.
- **Wireless power transfer (WPT) control techniques**, addressing efficiency and stability challenges.

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Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.
Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.
There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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