

Special Issue

Robust and Nonlinear Controllers for Power Electronic Systems

Message from the Guest Editors

The growing integration of variable renewable energy sources and other distributed energy resources underscores a critical need for advanced power electronic systems, which are pivotal in modern power systems, microgrids, and critical standalone applications. This Special Issue focuses on approaches and the design and modeling of robust and nonlinear controllers applied to power electronic systems. Key topics include:

- Advanced nonlinear controllers for power electronics;
- Advanced observer-based controllers for power electronics;
- Sliding mode control and advanced stability concepts (such as finite-time, fixed-time, and predefined-time stability) for power electronics;
- AI-optimized nonlinear controllers for power electronics;
- Adaptive and robust controllers for uncertain power electronic systems;
- Control of grid-forming and grid-following inverters;
- Power electronic systems in renewable energy applications;
- Experimental implementation of robust and nonlinear controllers for power electronics.

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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