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Advances in Wide Bandgap Technologies for Power Electronics

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Deadline for manuscript
submissions:

10 June 2024

Message from the Guest Editors

Dear Colleagues,

Wide-bandgap (WBG) semiconductor technologies such as those based on silicon carbide and gallium nitride address high-performance power conversion applications in the context of a fast-growing power electronics market.

The higher critical electrical field of WBGs with respect to silicon, which is currently the most widely used semiconductor in power electronics systems, has allowed the introduction of novel devices with lower conduction and switching losses. The majority of commercial gallium nitride devices have a lateral architecture, and silicon carbide ones have a vertical design; both originate from substrate type availability and specific material properties. Novel device-driving strategies and power circuit optimizations are developing with the increased availability of WBG power electronics devices.

The objective of this Special Issue is to cover all research activities related to WBG and ultra-WBG power electronics from materials, process development, devices, circuits and systems to applications and markets.



mdpi.com/si/111227

Special Issue



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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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Journal Rank: CiteScore - Q1 (*Engineering (miscellaneous)*)

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