Special Issue

Driving, Reliability, and Applications of Wide Bandgap Power Devices and Hybrid Power Devices

Message from the Guest Editors

Wide bandgap material-based third-generation power semiconductor devices, including silicon carbide and gallium nitride, have the following characteristics: a fast switching speed, reduced power losses, and high operating temperature. Their performance far exceeds that of existing silicon power devices, making it an important cornerstone for the green energy of the future. With the increasing maturity of wide bandgap power device technology, these devices will gradually replace the existing silicon power devices in various applications, such as new energy vehicles, data centers, rail transportation, smart grids, and new-generation mobile communications. This technology should greatly improve energy efficiency and is one of the key technologies affecting economic and social development. Based on this, this Special Issue focuses on the ontology characteristics of wide bandgap power semiconductor devices and their application technologies, aiming to present and disseminate the latest advancements related to the packaging, hybrid application with silicon-based devices, driving technology design, modeling, and reliability analysis of wide bandgap power devices.

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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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