



Special Issue on Design and Applications of Wide Bandgap

Devices for Power Electronics

Call for Papers

The fast development of Wide Bandgap (WBG) semiconductor devices like silicon carbide (SiC) and gallium nitride (GaN) devices has led to their drastic expansion in various applications. With the advantages of high breakdown electric field, low on-resistance, fast switching speed and high junction temperature capacity, WBG devices are promising to provide lighter, smaller, cheaper and reliable solutions, bring another 10-fold overall performance improvement, and revolutionise future power conversion systems. In recent years, some commercial and industrial products equipping WBG devices have appeared on the market, yet there are many challenges to be addressed as those can be found in manufacturing, packaging, assembly, testing, design, protection, control, electromagnetic interference (EMI) and health management, making WBG technology a double-edged sword. This special issue seeks to inform about latest contributions to existing knowledge that can help to exploit the full potential and reap the benefits of these devices.

The particular topics of interest include, but are not limited to:

- Applications of WBG devices in renewable energies/electric vehicles/battery chargers/wireless power transfer
- Gate drivers, passive components, protection, control and EMI/EMC issues for WBG devices
- Packaging and heterogeneous integration techniques for WBG devices
- Reliability and robustness studies of WBG devices
- Thermal analysis and temperature management of WBG device-based power converters
- Medium voltage (MV) power converters using WBG devices
- Modelling, simulation and design tools of WBG device-based power converters
- Advanced control of WBG power electronics system

Authors should read over the journal's [For Authors](#) carefully before submission. Prospective authors should submit an electronic copy of their complete manuscript through the journal's [Paper Submission System](#).

Please kindly specify the “**Special Issue**” under your manuscript title. The research field “**Special Issue – Design and Applications of Wide Bandgap Devices for Power Electronics**” should be selected during your submission.



Special Issue timetable:

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