



Wide-Band-Gap Devices Enabled High Efficiency and High Power-Density Motor-Drives

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Message from the Guest Editors

Electric motor drives are a pivotal element of our society, comprising well over half of the total electrical energy usage worldwide in a range of domains. Semiconductor power devices are key elements of motor-drive system design, determining the efficiency and volumetric/gravimetric density of the power converters and the machines.

Recently, new and revisited circuit topologies have been proposed, which utilize the high switching speed and frequency capability, high operational temperature and integration-level opportunities offered by WBG semiconductor technologies. This Special Issue aims to collect papers relating to WBG-based motor-drive design, demonstrating significant progress in this area. Topics of interest include (but are not limited to):

- Multi-level inverters, Y-Inverter and Current-Source Inverters;
- Integrated Motor Drives;
- Innovative machine concepts;
- High-frequency control solutions;
- High-boost ratios DC-DC converters;
- High-reliability applications;
- Reliability challenges and solutions;
- Long cable effects at high switching frequencies;
- Winding insulation and bearing degradation;
- Multi-domain physical design and design automation.





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Message from the Editor-in-Chief

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