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Analysis of SiC MOSFETs for Advanced Energy-Conversion Systems

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Message from the Guest Editor

Dear Colleagues,

Better energy-conversion systems exhibit not only increased conversion efficiency but also reduced size, which is essential for applications such as battery-operated vehicles. This demand has motivated the transition from Si to SiC diodes and controlled switches, including metal-oxide-semiconductor field-effect transistors. Today many companies offer SiC MOSFETs with record high blocking voltages and low on resistances. This motivates continued research and development aimed at utilizing these devices for a variety of systems, including high-frequency power converters, industrial motor drives, battery chargers, and solar inverters. Significant improvements in performance and reliability can be achieved because the existing commercial SiC MOSFETs do not fully utilize the material properties of SiC due to defects at and near the interface between SiC and the gate oxide.

This Special Issue is aimed at bringing the latest insights and research in related areas, ranging from device design, fabrication, and characterization to analysis of the potential that SiC MOSFETs offer for improved energy-conversion systems.

Prof. Dr. Sima Dimitrijević

Guest Editor



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Special Issue



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Message from the Editor-in-Chief

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