Special Issue

Analysis of SiC MOSFETs for Advanced Energy-Conversion Systems

Message from the Guest Editor

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.

Guest Editor

Prof. Dr. Sima Dimitrijev

Queensland Micro- and Nanotechnology Centre and School of Engineering and Built Environment, Griffith University, Brisbane, Australia

Deadline for manuscript submissions

closed (20 November 2022)

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/118233

Energies
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
energies@mdpi.com

mdpi.com/journal/energies

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/journal/energies

About the Journal

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.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, RePEc, Inspec, CAPlus / SciFinder, and other databases.

Journal Rank:

CiteScore - Q1 (Control and Optimization)