Special Issue

Advanced Studies in Wide-Bandgap Nanomaterials and Devices

Message from the Guest Editors

This Special Issue's focus includes, but not limited to following: Structural design and optimization for improving the performance of semiconductor materials and devices, including designing reasonable materials structures using DFT calculations and molecular dynamic simulations, and high-performance device structures using TCAD; New preparation and doping technologies for regulating the properties of semiconductor materials, including achieving the precise control of semiconductor materials at the atomic scale, and adding an appropriate amount of impurity atoms in order to change their band structure, carrier concentration, and other performance parameters; Surface treatment methods and technologies for improving the performance of semiconductor materials, including surface cleaning, etching, passivation, and other treatment methods; Performance characterization for experimentally investigating wide-bandgap semiconductor nanomaterials; Diverse applications of wide-bandgap semiconductor nanomaterials. See more information in: https://www.mdpi.com/si/207363

Guest Editors

Dr. Hongping Ma

Institute of Wide Bandgap Semiconductors and Future Lighting, Academy for Engineering & Technology, Fudan University, Shanghai 200433, China

Prof. Dr. Wei Huang

State Key Laboratory of ASIC and System, Shanghai Institute of Intelligent Electronics & Systems, School of Microelectronics, Fudan University, Shanghai 200433, China

Deadline for manuscript submissions

31 October 2025

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/207363

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

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Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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