Special Issue

Research on Antibacterial Properties of Metal-Based Nanomaterials

Message from the Guest Editor

Research into the antibacterial properties of metal-based nanomaterials represents a multifaceted exploration into harnessing the potential of nanotechnology to combat microbial infections. These investigations delve into a diverse array of metal nanoparticles, with prominent examples including silver, copper, zinc oxide, and titanium dioxide nanoparticles, each exhibiting unique characteristics and mechanisms of action against bacteria. The high surface-area-to-volume ratio and distinct physicochemical properties of these nanomaterials contribute to their remarkable antimicrobial efficacy. Central to this research endeavor is the comprehensive understanding of the intricate mechanisms that underly the antibacterial action of metal-based nanomaterials. These mechanisms may include the disruption of bacterial cell membranes, the generation of reactive oxygen species, or the interference with essential cellular processes. Moreover, scientists explore various synthesis methodologies and surface modifications to tailor the properties of these nanomaterials, aiming to optimize their antibacterial effectiveness while ensuring biocompatibility and safety.

Guest Editor

Dr. Richard Bright

Biomedical Nanoengineering Laboratory, College of Medicine and Public Health, Flinders University, Adelaide, Australia

Deadline for manuscript submissions

closed (20 September 2024)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/198274

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

mdpi.com/journal/nanomaterials

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/journal/nanomaterials

About the Journal

Message from the Editor-in-Chief

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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

Editor-in-Chief

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

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), PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Physics, Applied) / CiteScore - Q1 (General Chemical Engineering)

MDPI