Special Issue

Antimicrobial Nanomaterials: Advances, Challenges, and Future Perspectives

Message from the Guest Editors

The growing threat of microbial contamination and antibiotic resistance has created an urgent need for innovative strategies to prevent and control infections across healthcare, industrial, consumer, and environmental settings. Nanomaterials, owing to their unique physicochemical properties, have emerged as powerful tools for the development of next-generation antimicrobial solutions.

This Special Issue aims to showcase the latest advances in the development, characterization, and application of nanomaterials with antimicrobial functionalities. We welcome original research articles and comprehensive reviews that explore a wide range of themes related to antimicrobial nanomaterials. Contributions may include the synthesis and engineering of metallic, metal oxide, carbon-based, polymeric, hybrid, or photocatalytic nanomaterials; investigations into their antimicrobial mechanisms of action; and advances in multifunctional coatings and surface modification strategies. Studies assessing toxicity, biocompatibility, and environmental impact are also encouraged. We look forward to your valuable contributions.

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About the Journal

Message from the Editor-in-Chief

There are very few fields that attract as much attention as scientific endeavor related to antibiotic discovery, use and preservation. The public, patients, scientists, clinicians, policy-makers, NGOs, governments, and supra-governmental organizations are all focusing intensively on it: all are concerned that we use our existing agents more effectively, and develop and evaluate new interventions in time to face emerging challenges for the benefit of present and future generations. We need every discipline to contribute and collaborate: molecular, microbiological, clinical, epidemiological, geographic, economic, social scientific and policy disciples are all key. *Antibiotics* is a nimble, inclusive and rigorous indexed journal as an enabling platform for all who can contribute to solving the greatest broad concerns of the modern world.

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