Special Issue

Advanced Nanostructured Materials for Antimicrobial Applications

Message from the Guest Editor

A decade ago, it was discovered that the nanopillar topography of insect wings such as cicadas, dragonflies and damselflies, were not repelling bacteria as previously surmised, but rather bacteria were attaching and consequently being killed. The nature of the antimicrobial effect of insect wings has now been found to include activity toward both environmental fungi and pathogenic yeasts. Specifically, the antimicrobial nature is associated with the physical disintegration of attached microbes due to a mechanical injury. This exciting new discovery implies that, if successfully replicated on the surface of biomaterials and implantable devices, antibiotics would no longer be required to kill bacteria, and other microbes, that attach on such surfaces. This Special Issue aims to present work detailing the current state-of-the-art in advanced manufacturing of nanostructured nanomaterials for antimicrobial applications. Potential topics include, but are not limited to materials with antifungal (fungicidal), antibacterial (bactericidal) and/or antiviral (virucidal) efficacy; antimicrobial nanoparticles; antimicrobial nanostructured surfaces.

Guest Editor

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Deadline for manuscript submissions

closed (30 September 2023)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/161699

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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.

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