

Special Issue

Green Synthesis of Nanoparticles and Nanostructured Coatings with Antibacterial Properties

Message from the Guest Editor

Nanomaterials are interesting to fight bacterial infections. Due to their small dimensions, nanoparticles can easily interact with bacteria and even penetrate the bacterial membrane. Moreover, they exhibit higher reactivity compared to their respective bulk materials due to their high surface area to volume ratio. On the other hand, nanostructured coatings can inhibit bacterial adhesion (non-fouling surfaces) and even possess antimicrobial agents to destroy a bacterial biofilm. The fabrication of nanomaterials in a safe, environmentally-friendly and cost-effective manner is of the utmost importance. In particular, a promising approach is given by green chemistry: the use of living organisms, dietary and organic natural compounds and biological waste material coming from industrial plants, as efficient raw materials for the synthesis of nanoparticles. This Special Issue of *Nanomaterials* will attempt to cover the recent advancements in the environmentally-friendly production of nanoparticles and nanostructured coatings that exhibit antibacterial properties.

Guest Editor

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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.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

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