Special Issue

Eco-Friendly Nanomaterials: Innovations in Sustainable Applications

Message from the Guest Editors

This Special Issue aims to explore the unique interplay between the intrinsic properties of green nanomaterials and their potential to address global challenges across diverse applications. By investigating the synergistic effects of nanoscale material properties—such as size, surface area, morphology, optical, magnetic, and crystalline versus amorphous structures—this Special Issue will provide insights into how these characteristics contribute to multifunctionality. A particular focus will be placed on nanomaterials derived from natural, agro-waste, eco-friendly, and sustainable raw materials. Emphasis will also be placed on incorporating green sources, including polyphenols and other bio-based precursors, in synthesizing nanomaterials with applications in antibacterial, anticancer, anti-inflammatory, photocatalytic, and environmental remediation processes. Additionally, the issue will explore their roles in green energy production, heavy metal remediation, and water purification, with attention to environmental sustainability and resource efficiency.

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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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