Special Issue

Exploring Advanced Functional Materials in Photocatalysis and Their Role in Sustainable Technologies

Message from the Guest Editors

The exploration of functionalized materials and their nanostructures in the field of photocatalysis has received increased interest over the past decade. Engineered nanostructures, including advanced functional materials, metamaterials, and plasmonic materials, exhibit unique optical and electronic properties, empowering enhanced interactions between light and matter. Their development represents a significant advancement in materials science, particularly for applications aimed at environmental sustainability and energy conversion. This Special Issue aims to explore the integration of engineered materials in photocatalysis, emphasizing their ability to improve light absorption and reaction rates in photocatalytic processes such as water splitting to generate green hydrogen and CO2 photoreduction. We encourage submissions that showcase innovative designs, synthesis methods, and characterization techniques related to advanced materials and their photocatalytic applications. Research demonstrating novel nanoscale structures and their impact on photocatalytic efficiency will be particularly valuable.

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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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