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Advances in Nanomaterials for Photocatalysis

Guest Editor:

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Deadline for manuscript submissions:
10 December 2024

Message from the Guest Editor

Dear Colleagues,

Semiconductor nanomaterials and heterojunctions thereof, including those with (noble) metal nanoparticles, are of critical importance to photocatalysis. Over the past decades advances have been made to boost photocatalytic performance via designing multicomponent catalysts for a more efficient charge separation. The applications span a wide range of vital areas to the future of human society, most important among them are solar energy harvesting for water splitting, CO_2 reduction and pollutant and microorganism control.

This special issue of "Nanomaterials" will address current progress and future perspectives of nanophotocatalysts. We are inviting qualified reviews and progress research papers on the following topics:

- Nanomaterials design for photoelectrocatalysts, including 0D, 1D and 2D nanomaterials and their applications to water splitting;
- Nanophotocatalysts for CO_2 reduction;
- Nanophotocatalysts for pollutant and microorganism control;
- Processing methods, including but not limited to chemical, electrochemical and biomimetic methods;
- Nanophotocatalysts supports, design, processing and property control.

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Editor-in-Chief

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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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