Special Issue

Photocatalysis of Two-Dimensional (2D) Materials and Their Heterojunctions

Message from the Guest Editor

Photocatalysis is one of the important reactions of nanomaterials, and it provides an alternative reaction path to convert solar energy into different forms of energy for storage. Due to their high surface to volume ratio, extraordinary physical properties, and stability, two-dimensional (2D) materials have become one of the promising forms of materials of photocatalysts, and several types of photocatalysis reactions have been recently demonstrated, such as H2 evolution, CO2 reduction, N2 reduction, and water disinfection, among others. On the other hand, catalytic performances can be further improved by using heterojunctions as catalysts. Given a suitable band structure, photoexcited carriers can be effectively separated and then contribute to the catalytic reaction. This Special Issue aims to publish the latest state-of-art research findings on photocatalysis of 2D materials and their heterojunctions, including the demonstration of various types of photocatalysis, enhancement of performance via different methodologies and concepts, and development of 2D materials and heterojunctions. Accounts of both experimental and theoretical research are welcome.

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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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