Special Issue

Recent Advancements in Nanostructured Electro/Photocatalysts for Environmental and Energy Applications

Message from the Guest Editors

Nanostructured materials as “electrocatalysts and photocatalysts” have shown great potential as electro-photocatalysts for environmental and energy applications due to their unique physical and chemical properties such as high surface area, enhanced charge transport, tunable bandgap and Improved stability over bulk materials. Electrocatalysts play crucial roles in various energy generation, storage, and conversion applications, such as fuel cells, batteries, and electrolyzers. Electrocatalysts with high levels of activity improve energy efficiency and enhance performance by reducing the potential for electrochemical reactions. On the other hand, photocatalysts are materials that can harness light energy to drive chemical reactions in various environmental interests such as (i) air purification—removing harmful pollutants such as VOCs, NOx, and SOx; (ii) water purification—removing harmful pollutants such as pharmaceuticals, dyes, pesticides, herbicides etc.; (iii) self-cleaning surfaces; (iv) renewable energy—photoelectrochemical water splitting, etc.

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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

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