

Special Issue

Transition Metal-Based Nanostructures for Energy Storage and Conversion

Message from the Guest Editor

The development of powerful electrochemical energy conversion and storage devices is considered one of the greatest challenges for our society in terms of advancing science and technology today. Rechargeable lithium-ion batteries, supercapacitors, and fuel cells are the three most promising candidates in terms of energy densities and power densities. Transition metal-based nanomaterials (TMNs), including metal oxides, metal carbide, metal nitride, and metal sulfide, are currently of interest in the development of these devices because of their eco-friendly, novel size effects, their significantly enhanced kinetics, and so on. Therefore, the rational design of earth-abundant transition metal-based nanomaterials, as well as an understanding of their electrochemical behavior, are of great importance for developing next-generation electrocatalysts or electrode materials for electrochemical energy devices. We believe that this research topic has both academic and technological importance, and could offer exciting new scientific breakthroughs in cross-disciplinary areas.

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.

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