Special Issue

Nanostructured Materials for Energy Storage and Conversion

Message from the Guest Editor

The conversion and storage of renewable energy sources is an urgent challenge we have to confront in order to transition from a fossil fuel based economy to a low-carbon society. The development of new materials with improved characteristics is a key issue to enable this epochal transformation. Nanostructured materials are an attractive solution to achieve higher conversion efficiencies as well as enhanced power and energy density. The aim of this special issue is to collect state-of-the-art contributions related to various applications of nanomaterials in the field of energy conversion and storage. Examples include, but are not limited to, electrode and electrolyte materials for batteries, supercapacitors, solid-state hydrogen storage, nanostructured solar cells, heterogeneous catalysts, artificial photosynthesis, and plasmonics. Nanoscale features should be central to the properties of materials discussed in the manuscripts. The authors are encouraged to highlight the advantageous features of nanomaterials as well as to address their current limitations and challenges.

Guest Editor

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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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