Special Issue

Design of Nanocatalysts and Electrodes: Application to Fuel Cell and Water Electrolysis

Message from the Guest Editor

Fuel cells such as proton-exchange membrane fuel cells (PEMFCs) and anion-exchange membrane fuel cells (AEMFCs) using H2 as a fuel are one of the promising eco-friendly energy conversion devices since they produce electricity without pollution. Furthermore, strategies for the production and storage of H2 fuel have been extensively studied to accelerate the commercialization of fuel cell systems. In fuel cell applications, to decrease the use of expensive Pt or to replace the Pt-based catalysts by non-Pt- or carbon-based catalysts, scientist have proposed new ideas centered on the modification of catalyst structures. In the field of water electrolysis research, interesting approaches for the design of novel electrode and catalyst structures have been developed. In this Special Issue, recent advances and novel ideas regarding the design of nanomaterials and electrode structures for fuel cell and water electrolysis systems are presented. This collection also covers the electrochemical analysis of nanomaterials for H2 oxidation/evolution, O2 reduction/evolution, and methanol oxidation reactions in electrochemical energy conversion systems.

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.

Editor-in-Chief

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