Special Issue

Advanced Fuel Cells and Solid Batteries

Message from the Guest Editors

Fuel cells and batteries are two typical topics related to advanced energy conversion and storage in electrochemical methods. A new emerging tendency in recent research and development should be highlighted by introducing semiconductor materials and band theories to describe and develop new knowledge and technologies for advanced fuel cells and batteries. This Special Issue aims at covering the recent advances in designing nanostructured materials, and the functions of surfaces and heterostructures at various levels of materials and devices in relation to material properties and device performance. It also aims to cover semiconductor-based materials, nano-composite systems, and principles for electrochemical energy conversion and storage, describing their material properties, device functions with regard to solid interfaces and ionic correlative transport, fundamentals, and working principles, with an intention to advance the understanding of electrochemical devices for energy conversion and storage, as well as applications for emerging demands to promote the new generation of technologies.

Guest Editors

Prof. Dr. Bin Zhu

School of Energy and Environment, Southeast University, Nanjing, China

Prof. Dr. Yupping Wu

School of Energy Science and Engineering, Nanjing Tech University, Nanjing, China

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Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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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

Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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