Special Issue

Tailored Porosity in Nanomaterials for Energy Storage and Sustainability

Message from the Guest Editors

This Special Issue will showcase advancements in the design, synthesis, and application of porous nanomaterials, focusing on their role in energy storage technologies and sustainability. As global demand for efficient energy systems rises, innovative energy storage solutions like batteries, supercapacitors, and hydrogen storage systems are essential, especially considering the intermittent nature of renewable sources such as solar and wind. Porous nanomaterials exhibit tunable porosity and high surface areas that facilitate fast ion and electron transport, making them promising for energy storage. Optimizing porosity can lead to enhanced performance, including higher energy densities, improved cycle stability, and faster charge/discharge rates. Furthermore, developing eco-friendly porous materials is crucial for the transition to green energy. This special issue will focus on recent advances in designing and applying nanomaterials with tailored porosity and how this engineering can improve energy storage performance and foster sustainability. Researchers are encouraged to submit original research and review articles contributing to this vital field.

Guest Editors

Dr. Bo Chen

Department of Mechanical Engineering, A. James Clark School of Engineering, University of Maryland College Park, College Park, MD 20742, USA

Dr. Yang Wang

School of Chemical Engineering and Technology, Tianjin University, Tianjin 300350, China

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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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