Special Issue

Carbon-Based Nanomaterials and Nanocomposites: Preparation and Applications in Energy Storage and Conversion

Message from the Guest Editors

Carbon is a vital element due to its unique properties. Carbon nanomaterials (e.g., carbon nanotubes, graphene, graphdiyne, biomass-derived carbon, etc.) play a crucial role in a wide array of advanced technologies, particularly in energy storage and conversion applications. Their distinctive structures, high surface areas, and outstanding electrical conductivity make them ideal candidates for enhancing the performance of batteries, supercapacitors, and catalysts. Furthermore, by chemically modifying or structurally tailoring these carbon nanomaterials, or by integrating them with other inorganic or organic advanced materials, a diverse range of carbon-based nanomaterials and nanocomposites can be developed, significantly broadening their structural diversity, physical and chemical properties, and potential applications. This Special Issue aims to collect research on novel carbon-based nanomaterials and nanocomposites, with a particular emphasis on their preparation, properties, and applications in energy storage and conversion (such as batteries, supercapacitors, and catalysts). Research papers, reviews, and short communications on these topics are highly encouraged.

Guest Editors

Dr. Hong Shang

School of Science, China University of Geosciences, Beijing 100083, China

Dr. Bing Sun

School of Science, China University of Geosciences, Beijing 100083, 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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