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Carbon-Based Multifunctional Nanomaterials: Synthesis, Properties and Application

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Message from the Guest Editors

Carbon is known to form distinct solid-state allotropes with diverse structures and properties, such as sp2-bonded graphite and sp3-bonded diamond. Novel carbon nanomaterials composed entirely of sp2-hybridized carbon atoms have been developed in dimensionalities ranging from zero-dimensional (0D) fullerenes and one-dimensional (1D) carbon nanotubes (CNTs) to two-dimensional (2D) graphene in past decades. Generally, the atomic structures and interfacial interactions of carbon nanomaterials with materials in other phases has an important influence on the properties of the carbon nanomaterials. Therefore, the design and functionalization of carbon nanomaterials from a nanoscale perspective has become a popular strategy to achieve desirable properties for particular applications.

- carbon-based nanomaterials
- multifunctional composites
- theoretical calculation
- processing and forming of carbon-based materials
- carbon-based thermal conductive composites
- carbon-based energy composites
- carbon-based structural materials

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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.

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