Special Issue

Thermally Conductive Nanomaterials: Synthesis, Properties and Applications

Message from the Guest Editors

Thermally conductive nanomaterials have received significant attention in the scientific community due to their exceptional thermal conductivity and broad applications. These materials, including carbon-based, metal-based, ceramic-based, and polymer-based composites, exhibit outstanding thermal conductivity, mechanical strength, thermal stability, and chemical resistance. To control their microstructure, dimensions, and functionalization, various synthesis methods. By modifying their material composition, incorporating high-thermal-conductivity fillers, or optimizing interfacial structures, the properties of thermally conductive materials can be finely tuned. This tunability enables their application in diverse fields. However, fundamental questions remain regarding their thermal conduction mechanisms, their long-term stability in practical applications, and the feasibility of large-scale production. This Special Issue aims to collate cutting-edge research articles and reviews that focus on the synthesis, properties, and applications of thermally conductive materials. Original research articles and reviews are welcomed.

Guest Editors

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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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