Special Issue

Study on the Thermoelectric Properties of Nanostructured Materials

Message from the Guest Editors

Traditional carbon-based fossil energy resources emit greenhouse gases from human activities, making the average global temperature increase by 1□ in 2018, and be estimated to continue to increase by 1.5□ by as early as 2030. Thermoelectric materials can convert heat to electricity and vice versa without any noise, vibration, and emissions, facilitating the minimization of energy consumption and environmental damage. The advent of nanostructured thermoelectrics in the early 2000s led to a resurgence of interest in waste–heat utilization. Since nanostructuring can exert great influence over the carrier mobility, the Seebeck coefficient (energy filtering effect) and the phonon transport, a rational design of nanostructure can strike a superior synergy for high thermoelectric performance. This Special Issue welcomes efforts to discover new nanomaterials, novel synthesis methods, experimental characterization, computational modeling studies, as well as research on electrical and thermal transport properties.

Guest Editors

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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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