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Advances in Nanophononics

Guest Editor:

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Message from the Guest Editor

Phonons are quantized mechanical vibrations and, as electrons and photons, could be employed as energy and information carriers. The current state-of-the-art top-down fabrication sets a lowermost limit to feature size of about 10 nm, influencing the propagation of phonons in a frequency range where phononics can potentially become technologically relevant. Therefore, bringing phonons to the nanoscale has already generated an enormous increase of the activity in the field and, specifically, in the area known as nanophononics. Artificial structuring in the form of plates, layers, phononic crystals, and metamaterials leads to spatial dispersion as a result of symmetry constrictions and morphology of the structure.

This Special Issue is aimed to present original research papers or comprehensive reviews covering recent progress and new developments in the area of nanophononics. The topics span a wide range of research subjects, either from the experimental or the theoretical points of view, including experimental methods.

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Editor-in-Chief

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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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