Special Issue

Advances in Semiconductor Nanowires and Devices: Electrical and Sensing Properties

Message from the Guest Editor

Semiconductor nanowires have been the subject of research interest since the early 1960s with the discovery of silicon microwires or whiskers, and they have been actively investigated further for the last three decades. Their unique physical dimension, surface, and bulk properties enable a vast network of devices with applications in nanoelectronics, nanophotonics, thermoelectrics, energy conversion, and storage, as well as unusual applications for semiconductors such as biochemical sensors, drug delivery systems, and neural interfacing. Nanowire fabrication can usually be categorized as either bottom-up or top-down; the device concepts and architectures are numerous and vary significantly by application type. In the present Special Issue, we aim to highlight the current advances in developing the fundamental understanding of the electrical and sensing properties of the semiconductor nanowires and the growth, assembly, and manufacturing of electronic devices with applications in advanced electronics and sensing. In the present Special Issue, we invite contributions from leading groups in the field, aiming to give a balanced view of the current state of the art in this discipline.

Guest Editor

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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