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Preparation and Application of Nanowires

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Message from the Guest Editor

At the beginning of the 2000s, a rapid development of semiconductor nanowires began through the use of modern epitaxy techniques. This has resulted in tremendous progress in nanowire synthesis, characterization, and applications. One important advantage of nanowires is that they allow for a very efficient relaxation of elastic stress induced by lattice mismatch, thus enabling dislocation-free growth on dissimilar substrates such as silicon for III-V nanowires, and in nanowire heterostructures. Semiconductor nanowires are now widely considered as fundamental blocks of nanoscience and nanotechnology. This Special Issue will share the latest achievements in preparation, fundamental studies, and applications of nanowires in different material systems. Special emphasis will be put on the synthesis methods for fabrication of highly regular arrays of nanowires, ternary III–V nanowires and heterostructures based on such nanowires, morphological and crystal phase control in nanowires, advanced characterization techniques, and nanowires applications in electronics, photonics, and sensing.

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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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