Special Issue

Synthesis and Characterization of Semiconductor Nanomaterials

Message from the Guest Editor

In recent decades, the synthesis and study of nanocrystalline semiconductors has become an important interdisciplinary research field. Great interest in this field is due to the unique chemical and electronic properties of semiconductor nanomaterials. The small size of nanoparticles leads to a difference in their physical, chemical and electronic properties relative to the corresponding bulk materials, due to an increase in the contribution of the surface properties and the manifestation of quantum-dimensional effects. In recent years, significant efforts have been made to develop the methods for the synthesis of nanocrystalline semiconductors that allow us to control both particle size and particle size distribution. It has become possible to synthesize a variety of nanocrystalline semiconductors, including the following most common families of semiconductor materials: group IV elements, II–VI, IV–VI, III–V compounds, binary and complex metal oxides, etc. Nanocrystalline semiconductors can be synthesized with different microstructure dimensionalities (0D, 1D, 2D; 3D).

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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