Special Issue

Investigation of Inorganic Nanomaterials: Synthesis, Structures and Properties

Message from the Guest Editor

Physical properties in nanoscale systems can differ from the respective bulk phase and even lead to novel properties. Therefore, recent efforts have mainly focused on the synthesis of very small/thin structures. Lately, materials with 2-dimensional layer structures beyond graphene have moved into the focus of research. Often, top–down approaches are applied for downscaling the particle dimensions. Commonly used in 2D materials, exfoliation processes break weak structural interactions, thus leading to particles and thin sheets, even down to monolayer dimensions. Novel synthesis concepts shall address bottom–up approaches in order to precipitate pure nanocrystallites and to avoid defects occurring from mechanical stress during delamination. Completion of these concepts by rational synthesis planning additionally gives more knowledge and efficiency in materials synthesis. Further characterization methods are convenient for proof of chemical composition, crystallinity and structure, morphology, as well as physical properties on nanoscale dimension.

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.

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