



Structure, Properties and Applications of Nanocrystalline Thin Films

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Message from the Guest Editor

Dear Colleagues,

The controlled synthesis and assembly of nanocrystals has enabled the development of nanocrystalline thin film with a unique morphology, where the crystals of nanometric dimensions coexist with high surface area (controlled porosity) and crystallographic texture. This advance favored the development of new sensor devices, as well as electrodes for application in electronic, photovoltaic, and photoelectrochemical devices, directly impacting the performance of alternative energy devices.

Despite the progress achieved so far, many challenges still exist. For example, the controlled assembly of nanocrystals over large areas is a challenge. The use of heat treatment aiming to modify the morphology, structure, and property of nanostructure films is poorly explored. Controlled deposition of 2D materials from colloidal processes is still in its infancy.

Therefore, we invite all researchers involved with colloidal nanocrystal deposition, nanocrystal assembly, 2D materials assembly, and application of nanocrystalline films for sensors and energy devices to contribute to the upcoming Special Issue related with this theme.





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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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