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Characterization of Nanocrystalline Materials

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Message from the Guest Editors

The tumultuous development of nanocrystalline materials in the last twenty years has been accompanied by a flourishing of characterization techniques, often developed for nanoscale investigations. Traditional techniques for studying materials require substantial modifications to adapt to the specificities of nanocrystalline materials. Nanocrystals cannot simply be considered as a small portion of a macroscopic crystal and the clear knowledge of interaction volume between the probe and the material is paramount in the understanding of what is being measured and the inferred properties from the nanoscale, eventually up to the whole device. Even the usual concepts of symmetry, for example, translational, and the concept itself of crystalline structures, are unsuitable and require a paradigm shift in the use of traditional techniques. This Special Issue is dedicated to the characterization of nanocrystalline materials and their aggregates, including new and advanced techniques as well as the more traditional ones, as they evolved and were modified to study materials at the nanoscale.

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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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