



Advanced Synchrotron Radiation Techniques for Nanostructured Materials

Guest Editor:

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Message from the Guest Editor

Nanostructured materials exploit physical phenomena and mechanisms that cannot be derived by simply scaling down the associated bulk structures and phenomena; furthermore, new quantum effects come into play in nanosystems. The exploitation of these emerging nanoscale interactions prompts the innovative design of nanomaterials.

Understanding the behavior of materials on all length scales, from the nanostructure up to the macroscopic response, is a critical challenge for materials science. Modern analytical technologies based on Synchrotron Radiation (SR) allow the non-destructive investigation of the chemical, electronic, and magnetic structure of materials in any environment. SR facilities have developed revolutionary new ideas and experimental set-ups to characterize nanomaterials, involving spectroscopy, diffraction, scatterings, microscopy, tomography, and all kinds of highly sophisticated combinations of such investigation techniques.





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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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