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Transmission Electron Microscopy for Nanomaterials Research Advances

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Message from the Guest Editors

Since Ruska and Knoll proof of concept of transmission electron microscope, in 1931, technological advances and methodological development have made Transmission Electron Microscopy (TEM) a complex discipline, counting a vast variety of approaches to understand the morphological, structural, chemical and magnetic properties of the matter at the highest spatial resolution. Due to its strong transversality and high flexibility, TEM enables to solve fundamental and applied research problems, contributing to the progress in many fields of knowledge, such as physics, materials science, biology, medicine, engineering, chemistry, nanoscience and nanotechnology.

This special issue focuses on TEM studies for nanomaterials research advances. An upcoming aim is to show how the most recent technological and methodological developments in TEM impact on the comprehension of fundamental and subtle properties of nanomaterials, supplying the necessary knowledge for basic understanding of the nanoscience phenomena and for conscious design of new nanomaterials.



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Special Issue



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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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