

Special Issue

Progress in Magnetic Nanoparticles: From Synthesis to Applications

Message from the Guest Editors

Magnetic nanoparticles in all sizes and shapes, as well as their assembly into functional structures, have attracted significant attention in recent decades. We want to highlight their ability to heat when subjected to radiofrequency fields, the possibility of manipulating and guiding them using external magnetic fields, and the unconventional magnetic phenomena that arise when the size is decreased. A significant amount of research efforts are devoted to improving their synthesis and reproducibility, tailoring their properties, and creating assembled materials where magnetic properties are enhanced in various ways. From sensing to catalysis and in nanomedicine and environmental sciences, magnetic nanoparticles have a wide range of applicability today. This Special Issue aims to gather an extensive compilation of cutting-edge research articles, communications and reviews related to the development of magnetic nanoparticles, including synthesis approaches, their assembly in complex structures and the collective properties thereof, chemical functionalization and characterization, theoretical modeling and computational studies and their multidisciplinary applications.

Guest Editors

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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.

Editor-in-Chief

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