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Nanodiamond Applications: From Biomedicine to Quantum Optics

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Message from the Guest Editors

Nanodiamond (ND) particles have recently emerged as a key platform for many developments in nanoscience and nanotechnology due to their outstanding mechanical performance, biocompatibility, facile functionalization and unique optical properties, a combination of features not often met in the nanoworld. Their super-hardness and exceptional chemical resistance motivate the application of NDs in novel wear-resistant polymer and metal coatings. Especially impressive are demonstrations of ND applications in biomedicine. The unique photoluminescent and spin properties of impurity defects in the diamond lattice has become an area of active research due to emerging applications in quantum information processing, bioimaging, and nanosensing. This Special Issue focuses on the latest achievements in ND developments and their practical applications. It aims to attract both academic and industrial researchers in order to foster the current knowledge of the diamond nanomaterial and to present new ideas for its future applications.

- nanodiamond
- quantum information processing
- bioimaging
- nanosensing
- photoluminescence
- single-photon emitters



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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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