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Applications of Nanoparticles in Superconducting Materials

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Deadline for manuscript submissions:
closed (30 September 2021)

Message from the Guest Editors

We warmly welcome contributions dealing with superconducting nanoscale materials (nanoparticles, nanowires, etc.) as well as applications of nanoparticles in superconducting materials. The scope of this Special Issue contains different aspects of such nanomaterials:

- How does superconductivity behave at the nanometer scale, i.e., when the regime is reached where the size of the nanoparticles is comparable to or smaller than relevant superconducting length scales, such as the coherence length or the magnetic penetration depth?
- How are the mechanisms of superconductivity (Cooper pair formation, phonons, exotic superconductivity, etc.) affected by or altered by the confinement that is imposed by the size of nanoparticles and nanowires?
- How can nanoparticles be employed to tune and optimize the properties of superconducting materials, e.g., to enhance vortex pinning or to induce superconductivity in non-superconducting materials via, e.g., the proximity effect?

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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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