

## Special Issue

# Applications of Nanoparticles in Superconducting Materials

### 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?

---

### Guest Editors

Prof. Kristiaan Temst

Quantum Solid-State Physics, Department of Physics and Astronomy,  
University of Leuven, Leuven, Belgium

Prof. Margriet J. Van Bael

Quantum Solid-State Physics, Department of Physics and Astronomy,  
University of Leuven, Leuven, Belgium

---

### Deadline for manuscript submissions

closed (30 September 2021)



## Nanomaterials

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.3  
CiteScore 9.2  
Indexed in PubMed



[mdpi.com/si/60389](https://mdpi.com/si/60389)

*Nanomaterials*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[nanomaterials@mdpi.com](mailto:nanomaterials@mdpi.com)

[mdpi.com/journal/  
nanomaterials](https://mdpi.com/journal/nanomaterials)





# Nanomaterials

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.3  
CiteScore 9.2  
Indexed in PubMed



[mdpi.com/journal/  
nanomaterials](https://mdpi.com/journal/nanomaterials)



## About the Journal

### 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.

---

### Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPIus / SciFinder, Inspec, and other databases.

#### Journal Rank:

JCR - Q2 (Physics, Applied) / CiteScore - Q1 (General Chemical Engineering)