

## Special Issue

# Thermoelectric Properties of Nanomaterials

### Message from the Guest Editor

In recent years, many research groups worldwide have experienced difficulty in increasing the figure-of-merit of thermoelectric materials. This is because most of these thermoelectric materials exhibit a rather **complex microstructure**, with a **hierarchical structure** containing point (vacancies and donor defects) and extended defects (dislocations and stacking faults), secondary stable and/or metastable phases, twin boundaries and/or high-angle grain boundaries, and different atomic bonding natures. Therefore, to further increase the performance of thermoelectrics, a detailed and accurate understanding of structural, chemical, electronic, and phonon transport properties from mesoscale down to atomic level is necessary. Moreover, the impact of **nanostructuring** in thermoelectric properties is vital. Hence, this Special Issue will attempt to cover the most recent advances in nanostructuring for thermoelectric applications, with a special attention to synthesis and characterization. Last but not least, a particular attention will be given to the structural and functional properties of these nanomaterials. Design rules of better thermoelectrics for the future are greatly welcome too.

---

### Guest Editor

Prof. Dr. Oana Cojocaru-Mirédin  
Albert-Ludwigs-University of Freiburg, INATECH, 79100 Freiburg,  
Germany

---

### Deadline for manuscript submissions

closed (25 October 2021)



## Nanomaterials

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.3  
CiteScore 10.3  
Indexed in PubMed



[mdpi.com/si/46204](https://mdpi.com/si/46204)

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

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





# Nanomaterials

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.3  
CiteScore 10.3  
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)