



## Structural Phenomena in Metallic Materials for Demanding Applications

Guest Editor:

**Dr. Lenka Kunčická**

Institut of Physics of Materials,  
Czech Academy of Sciences,  
Brno, Czech Republic

Deadline for manuscript  
submissions:

**10 August 2024**

### Message from the Guest Editor

The ever-increasing requirements of industry and commerce on the performance and longevity of components produced from metallic materials have encouraged the research and development of innovative engineering materials based on iron/steel and nonferrous metals, as well as metal-based composites. The properties of modern materials and alloys ensue from their structures. Structural phenomena, such as substructure development, volumes and types of grains boundaries, twinning, texture formation, as well as the possible occurrence of residual stress and mutual diffusion of the individual phases, non-negligibly affecting the performance of metallic components, can primarily be affected by their chemical and phase composition, and the applied preparation/production technology.

At the beginning of the production process, the material is affected by the manufacturing method. The selected parameters of casting, additive manufacturing, or powder metallurgy processing all influence the structures and properties of the final material. Among the favorable ways to effectively enhance the properties of metallic materials is also grain refinement [...]





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada

2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

## Message from the Editor-in-Chief

*Materials* (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

## 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, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

**Journal Rank:** JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q2 (*Condensed Matter Physics*)

## Contact Us

Materials Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/materials](http://mdpi.com/journal/materials)  
[materials@mdpi.com](mailto:materials@mdpi.com)  
[X@Materials\\_Mdpi](https://twitter.com/Materials_Mdpi)