

Special Issue

Metallic Materials: Microstructure, Phase Equilibria and Thermodynamics

Message from the Guest Editors

Thermodynamics describes the state of a system and its interaction with its surroundings, which is an extremely powerful tool in the field of materials science. The study of thermodynamics is central to the understanding of phase equilibria and phase transformation, which helps to construct relationships between composition, microstructure, processes and properties. The relationship between thermodynamic functions and the equilibrium phase diagram of a binary system was made explicit as early as 1908. After more than 50 years of development in engineering design and computational simulation, a particularly successful and widely used modeling method in thermodynamics is the CALPHAD method. This method can now be used to predict phase equilibria, phase diagram and various thermophysical parameters, which are key inputs for microstructure simulation and performance prediction. Microstructure, phase equilibria and thermodynamics are the basis for integrated computational materials engineering and need to be studied systematically and in depth. I wish to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

Guest Editors

Dr. Yuling Liu

Dr. Peisheng Wang

Prof. Dr. Yong Du

Prof. Dr. Qun Luo

Deadline for manuscript submissions

closed (31 July 2024)



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/164482

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

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





Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



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



About the Journal

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.

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

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 and Metallurgical Engineering) /
CiteScore - Q1 (Condensed Matter Physics)