

## Special Issue

# Thermodynamic Modeling of Phase Equilibrium in Metallic Materials

### Message from the Guest Editor

The choice of materials has become a key element in the environmentally friendly industry. Sustainability through materials allows for a better use of energy, improved efficiency, and lower costs. The development of green technologies and sustainable materials plays an important role in addressing the climate change challenge. In order to design alloys, computer simulation of phase diagrams has major importance. CALPHAD methodology is used to predict thermodynamic, kinetic, and other properties of multicomponent material systems. New emerging methods such as artificial intelligence have been recently introduced to simulate phase diagrams. This Special Issue aims to address the latest research devoted to the thermodynamic modeling of phase equilibrium and other properties in metallic materials, especially for sustainable materials for energy (e.g., nuclear), automotive, aerospace, and other applications.

- thermodynamic modeling
- phase diagrams
- solidification
- alloying design
- CALPHAD
- Gibbs energy function
- artificial intelligence
- corrosion

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### Guest Editor

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### Deadline for manuscript submissions

closed (31 March 2025)



## Metals

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## About the Journal

### Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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### Editor-in-Chief

Prof. Dr. Yong Zhang

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JCR - Q2 (Metallurgy and Metallurgical Engineering) /  
CiteScore - Q1 (Metals and Alloys)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.7 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the second half of 2025).