

## Special Issue

# Numerical Simulation of Foundry and Solidification Processes

### Message from the Guest Editors

Casting is one of the most widely used metal forming methods and serves as a foundation in the aviation, aerospace, and automotive industries, among others. However, the complexity of the processing conditions makes it difficult to observe and optimize the casting process. Numerical simulation technology provides a digital representation of the high-temperature metal liquid evolution process and enables the prediction of casting quality. The continuous development of numerical simulation technology for the mold filling and solidification processes in casting has played a crucial role in achieving high-quality castings, making it a key technology in the foundry industry. This Special Issue welcomes various research articles on numerical simulations of foundry and solidification processes, including those that focus on casting process (such as smelting, mold-filling, solidification, heat treatment, core making, etc.) simulation technology, multi-scale simulation technology, defect prediction technology, high-precision and highly efficient algorithms, and more. We look forward to receiving your contributions.

---

### Guest Editors

Prof. Dr. Jianxin Zhou  
Dr. Yajun Yin  
Dr. Xiaoyuan Ji

---

### Deadline for manuscript submissions

closed (15 May 2024)



## Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/184044](https://mdpi.com/si/184044)

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

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





# Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



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



## 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.

---

### Editor-in-Chief

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering,  
State Key Laboratory for Advanced Metals and Materials, University of  
Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083,  
China

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei  
Compendex, CAPlus / SciFinder, and other databases.

#### Journal Rank:

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).