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

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

mdpi.com/journal/metals

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/journal/metals

About the Journal

Message from the Editorial Board

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.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez
Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

MDPI