Special Issue

Solidification and Casting of Engineering Metals: Modeling and Simulation

Message from the Guest Editor

Solidification is a fundamental aspect of casting and welding processes, even the emerging metal additive manufacturing processes. Knowledge of how to control the solidification process is, therefore, essential in order to ensure the quality of finished products. Over the last few decades, physical and numerical modeling has proven to play an important role in our understanding of some of the phenomena which occur in the harsh, high-temperature environment associated with solidification. Modeling of the phenomena and/or processes involved in solidification has resulted in a remarkable increase in knowledge and is thus indispensable if existing process limits are to be overcome. With the ever-increasing economic and environmental demands on the production, and the simultaneously decreasing costs of computational resources, the role of numerical modeling appears more important than ever. The upcoming Special Issue of Materials aims to present new developments in the modeling and simulation of metal solidification. We invite you to submit research papers and reviews related to the latest achievements and developments in the multiscale modeling of metal solidification.

Guest Editor

Prof. Dr. Qingyan Xu
School of Materials Science and Engineering, Tsinghua University, Beijing 100084, China

Deadline for manuscript submissions

closed (31 May 2023)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/76081

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 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 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