

Special Issue

Numerical and Physical Modeling in Steel Refining and Casting

Message from the Guest Editors

High-quality steel is one of the most important raw materials to support the development of our society. In the past years, its production technology has achieved great advances, where physical and numerical modelling play an important role in this aspect. The social development puts forward improved requirements on physical and mechanical properties of steel. This in turn requires a strict control in the steel production process with respect to steel compositions, cleanliness, homogenization, solidification structure, and various defects of steel semi-product. In addition, it is necessary to further improve the production efficiency and to lower the production cost, which is important for the sustainable competitiveness of steel. To achieve the above aims, technological progress in steel refining and casting are of great significance. We want to present state-of-the-art studies which bring new insights in steel refining and casting. Articles of numerical and physical modelling including but not limited to ladle refining, vacuum processing, continuous casting, and ingot casting are welcome.

Guest Editors

Prof. Dr. Peiyuan Ni

1. School of Metallurgy, Northeastern University, Shenyang 110819, China
2. Key Laboratory of Ecological Metallurgy of Multi-Metal Intergrown Ores of Education Ministry, Northeastern University, Shenyang 110819, China

Prof. Dr. Qiang Yue

School of Metallurgical Engineering, Anhui University of Technology, Maanshan 243032, China

Deadline for manuscript submissions

closed (31 October 2022)



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/76159

Metals

Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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 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).