

Special Issue

Advances in Electroslag Remelting and Continuous Casting Technology

Message from the Guest Editors

Electroslag remelting (ESR) and continuous casting (CC) are pivotal technologies for manufacturing high-performance alloys. This Special Issue seeks cutting-edge technologies addressing core challenges in clean steel production, including segregation control, the removal of inclusions, slag-metal interactions, and microstructure homogeneity. We invite contributions leveraging advanced methodologies such as computational fluid dynamics (CFD) and machine learning to drive innovations in process efficiency and product quality. The scope covers the following topics: fundamental mechanisms, including solidification behavior in ESR/CC systems, thermodynamics of slag systems and inclusion evolution, and macrosegregation mitigation strategies for ultra-clean steel production; process innovations, such as novel electromagnetic devices, slag compositions for enhanced metal purification, and development in combined external field control; and digital transformation, involving the CFD modeling of molten metal flow, heat transfer, thermal stress, machine learning-based defect prediction, and real-time process optimization.

Guest Editors

Dr. Xuechi Huang

School of Metallurgy, Northeastern University, Shenyang 110819, China

Dr. Fang Wang

School of Metallurgy, Northeastern University, Shenyang 110819, China

Deadline for manuscript submissions

31 March 2027



Metals

an Open Access Journal
by MDPI

Impact Factor 3.1
CiteScore 5.7



mdpi.com/si/267142

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 3.1
CiteScore 5.7



[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, CAPus / 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 15.3 days after
submission; acceptance to publication is undertaken in 2.9
days (median values for papers published in this journal in
the first half of 2026).