

## Special Issue

# Inclusion Precipitation during Solidification of Steels

### Message from the Guest Editors

The precipitation of non-metallic inclusions during solidification of steel has strong effects on cleanliness and also the mechanic properties of steels. The control of inclusion size and composition will lead to “clean steel” with superior properties. Meanwhile, originating in welding science and technology, microstructure control by inclusions, i.e. “oxide metallurgy”, was proposed 30 years ago and now have found some new applications in advance processing techniques, e.g. additive manufacturing. The current special issue is focused on the recent progress of inclusion engineering on control of steel cleanliness and microstructure by modelling and experimental work. The studies carried out in laboratories and steel plants on behaviors of inclusions during refining and solidification are of interest. The modeling contributions on inclusion formation during refining and solidification are also welcomed. The roles of inclusion sizes and compositions in steel microstructure are of particular interests. The studies on inclusion behavior during special steel processing are especially welcomed.

---

### Guest Editors

Prof. Dr. Qifeng Shu

Research Unit of Process Metallurgy, Oulu University, Oulu, FI-90014, Finland

Prof. Dr. Chengbin Shi

State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, Beijing 100083, China

---

### Deadline for manuscript submissions

closed (30 June 2022)



## Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/77160](https://mdpi.com/si/77160)

*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).