

## Special Issue

# Numerical Modelling in Steel Metallurgy 2022

### Message from the Guest Editor

The main idea of the current, new SI in 2022, “Numerical Modelling in Steel Metallurgy 2022”, is to cover all aspects related to new developments in the mathematical and numerical modelling as well as the thermodynamic calculation of the metallurgical processes of steelmaking. The method of mathematical and numerical modelling plays an irreplaceable role, especially in demanding metallurgical conditions where it is very difficult to obtain information about the effect of the boundary conditions (BCs) on the steel flow in metallurgical reactors (BOF, EAF, LF, ladle, tundish, mould, and SEN), about the effect of BCs on steel refining during its treatment (LF, VD, RH, and AOD), or about the casting and solidification of steel with the prediction of internal defects (ingot casting, continuous casting, central porosity, macrostructure, hot tears, cracks, oscillation marks with cracks, etc.).

Mathematical methods can also be used to evaluate the quality of ore raw materials. The multicriteria character includes models for their evaluation. The thermodynamic calculations of metallurgical processes (e.g., desulphurization) are also very useful.

### Guest Editor

Prof. Dr. Markéta Tkadlečková

Technology and Research/TRINECKÉ ŽELEZÁRNY, a.s., Průmyslová 1000, Staré Město, 739 61 Třinec, Czech Republic

### Deadline for manuscript submissions

closed (31 December 2022)



## Metals

an Open Access Journal  
by MDPI

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/76054](https://mdpi.com/si/76054)

*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 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).