Special Issue

Numerical Modelling in Steel Metallurgy

Message from the Guest Editor

Steel production represents a complex process which is accompanied by a series of physical-chemical processes from melting, through the multiphase flow of steel and chemical reactions (processes taking place between the slag, metal, and an inert gas) after solidification. A frequent problem in steel production is setting the correct conditions, e.g., in blowing argon for the steel processing in a ladle, the vacuum degassing of steel, optimising the nature of flow in individual reactors (ladle, tundish, nozzles, moulds), or the conditions for casting and the solidification of steel. Understanding these mechanisms requires knowledge from the technology of steel production, metallurgical thermodynamics, and kinetics. The main aim of Special Issue “Numerical Modelling in Steel Metallurgy” is to present new knowledge and trends in the optimization of steel production using numerical modelling. Articles on the numerical modelling of steel refining in ladle, vacuum processing, steel flow optimization in tundish or mould, slag emulsification into steel, steel ingot casting and continuous casting, are welcome.

Guest Editor

Prof. Dr. Markéta Tkadlečková
Technology and Research/TŘINECKÉ ŽELEZÁRNY, a.s., Průmyslová 1000, Staré Město, 739 61 Třinec, Czech Republic

Deadline for manuscript submissions

closed (31 January 2021)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/42360

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