Special Issue

Modeling and Simulation of Multiphase Transport Phenomena in Process Metallurgy

Message from the Guest Editor

Process metallurgy typically involves complex multiphase transport phenomena (MTP), including fluid flow, heat, and mass transfer between inter/intraphases with the dispersed phases such as droplets, particles, and bubbles (DPBs) and continuum carried phase(s). With the rapid development of computer technology, many advanced computational technologies have been developed and applied to tackle problems of various types.

In this Special Issue, I am pleased to invite you to contribute to this topic related to the modeling and simulation of metallurgical processes, especially involving DPBs and MTP (either discrete- or continuumbased), such as molecular dynamics (MD), lattice Boltzmann method (LBM), smooth particle hydrodynamic (SPH), discrete element method (DEM), population balance model (PBM), two/multi-fluid method (TFM), Eulerian–Eulerian (E-E CFD), volume of fluid (VOF), or their coupled/combined/hybrid methods. The application of these techniques in metals processes is particularly encouraged, and related experimental or physical model investigations are also welcomed.

Guest Editor

Dr. Qiang Li

School of Metallurgy, Northeastern University, Shenyang 110819, China

Deadline for manuscript submissions

closed (31 March 2024)



Metals

an Open Access Journal by MDPI

Impact Factor 2.5 CiteScore 5.3



mdpi.com/si/106555

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



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).

