Special Issue

Applications of Intelligent Process Systems in Metallurgy

Message from the Guest Editor

With the rapidly increasing digitization of society, artificial intelligence, and systems designed to learn from data, more specifically, play a key role in the ongoing automation of industries based on modern smart technology. In this Special Issue of *Metals*, we aim to elucidate the impact of these developments on metallurgical industries, including extractive and process metallurgy. Therefore, papers dealing with all aspects of intelligent process systems and their applications in metals industries are welcome. Topics of interest include, but are not limited to, the following:

- Smart sensors, soft sensors, inferential sensors, body sensors, and sensor networks;
- Visualization of data and information processing, exploratory data analysis, and data mining;
- Processing of nonlinear signals, such as electrochemical noise in corrosion systems, acoustic signals in grinding circuits, or hyperspectral imaging;
- Intelligent decision support realized through fuzzy systems, expert systems, and case-based reasoning;
- Diagnostic and predictive modelling and advanced process control based on machine learning.

Guest Editor

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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/79212

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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.

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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).

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