Special Issue

Advanced Computational Modeling of Metal Transformation Processes

Message from the Guest Editor

The objective of this Special Issue is to gather articles aimed at understanding the physical phenomena implied in metal transformation processes using numerical simulation techniques. All types of processes are targeted, including the following:

- Fusion manufacturing: additive manufacturing, casting, sintering;
- Metal forming: forging, stamping, rolling;
- Material removal: turning, grinding, drilling;
- Joining: welding, riveting, bonding;
- Heat and surface treatments: quenching, surface hardening, shot peening, carburizing, nitriding.

Topics of interest include, but are not limited to, the following:

- New modeling capabilities;
- Material behavior modeling;
- Material characterization;
- Advanced computational methods or simulation methodologies;
- Combined experimental and numerical studies;
- Numerical simulation of chaining of processes;
- Prediction of the final state of the fabricated part in connection with lifetime analysis.

Guest Editor

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Deadline for manuscript submissions

closed (31 March 2021)

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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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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).

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