Special Issue

Numerical Modelling of Metal-Forming Processes

Message from the Guest Editors

Metal forming is a widespread manufacturing technology used to shape metal workpieces into components with added value through plastic deformation. By simulating metal-forming processes using computational techniques, numerical modelling provides a more efficient, cost-effective, and environmentally friendly approach for process optimization, while also driving innovation in material design, tooling, and process mechanisms, contributing to significant advancements in the field of metalworking and manufacturing. This Special Issue aims to provide novel contributions to the field of metal forming with emphasis on numerical modelling. Research areas may include (but are not limited to) the following:

- Finite element analysis of metal-forming processes;
- New material constitutive models;
- Thermo-mechanical coupling involving heat generation and/or phase transformation;
- Friction and contact modelling;
- Multiscale modelling;
- Formability analysis for predicting defects;
- Simulation of hybrid processes involving additive manufacturing or joining processes;
- Mesh-free or adaptive meshing methods.

Guest Editors

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Deadline for manuscript submissions

closed (30 April 2025)

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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

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