

Special Issue

Modelling and Simulation of Microstructure Evolution in Manufacturing Processes

Message from the Guest Editor

Properties of metallic materials depend not only on their chemical composition, but also to a large extent on their microstructure, which evolves during various steps of manufacturing, e.g., from casting, extrusion, or hot rolling to heat treatment, cold forming, or welding.

Modelling and simulation can enhance our understanding of microstructure evolution and hence provide a complement to experimentation, to predict, control and design microstructures for superior properties and optimum performance of metallic components.

This Special Issue is to serve as a source of information on recent advances in the area of microstructure modelling for scientists and engineers with an interest in manufacturing with metals. The aim is to provide a variety of examples of research and development activities in this field, where an analytical or numerical method is used to model microstructure formation in metallic materials during a manufacturing process.

Guest Editor

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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

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