

Special Issue

Additive Manufacturing of Metallic Materials: Characterization, Properties, and Modeling

Message from the Guest Editors

Additive manufacturing (AM) technologies are positioned to provide a disruptive transformation in how products are designed and manufactured. AM is based on adding materials layer-wise and scanning the part geometry using a moving heat source in a prescribed scan pattern. Understanding this variation and its correlation to material microstructure, defects, and temperature variations provides a better understanding of the metal AM processes and methods to improve them. This Special Issue aims to collect the latest developments in the field, original research articles and reviews are welcome. Research areas may include (but are not limited to) the following: Innovative AM technologies and process parameter optimization; AM process–geometry–property correlations; AM process modeling and simulation; Design, analysis, and additive manufacturing of porous metallic structures and scaffolds; Design and development of TRIP and TWIP alloys, high-entropy alloys, and precipitation-strengthened alloys by additive manufacturing; Mechanical and microstructural characterization of AM parts; Tensile properties, fatigue, fracture, and failure analysis of AM parts.

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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

Prof. Dr. Yong Zhang

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