Special Issue

Design and Optimization for Metal Additive Manufacturing

Message from the Guest Editor

Metal additive manufacturing (AM) has emerged as a transformative technology that enables the production of complex, high-performance components with unprecedented geometric and material flexibility. As the technology matures, the focus is increasingly shifting from feasibility to optimization—optimizing not only the final part of geometry and performance, but also the design methods, process parameters, and multi-scale material architectures that define the AM workflow. This Special Issue aims to highlight cutting-edge research in the design, optimization, and performance enhancement of metallic components fabricated via AM. Contributions that advance our understanding of how to fully leverage the design freedom and unique capabilities of metal AM are especially welcome. We are particularly interested in work that integrates computational design, simulation, and experimental validation to drive innovation across materials, processes, and applications.

Guest Editor

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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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