

Special Issue

Selective Laser Melting: Microstructure and Properties Optimization for Metals and Alloys, Metal Matrix Composites, Lattice and Hybrid Parts

Message from the Guest Editors

Selective laser melting (SLM) is an interesting technology for the manufacture of high-performance metal components. A broad range of metallic alloys have been processed by SLM, such as aluminum alloys, titanium alloys, iron–steel alloys, nickel alloys, cobalt alloys, copper alloys, and their combinations or composites. Over the last decade, SLM has been significantly improved in terms of the technological capability and quality of the parts. Some SLM components have already been applied in many fields, such as in the aerospace, biomedical, and automotive industries.

The focus of this Special Issue is on exploring the possibility of tuning process parameters and post-processing techniques and heat treatments for the optimization of microstructure features, defects, and properties of metals and alloys. We welcome all original research articles and reviews regarding:

SLM of metallic alloys (for aerospace, automotive, and biomedical applications);

SLM metal-matrix composites;

SLM hybrid metal components;

SLM lattice structure.

Guest Editors

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Deadline for manuscript submissions

closed (20 February 2025)



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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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