



Powder-Bed Fusion Processes

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Message from the Guest Editor

This Special Issue is dedicated to the publication of research papers and reviews where the focus is on the industrial applications of powder bed fusion technologies (PBF), to illustrate recent advances in the field. AM-PBF processes are currently providing novel approaches to control the topological structures, microstructures, and mechanical properties of components that are integrated in numerous industrial applications.

Topics of particular interest include, but are not limited to:

- Advancements in SLM, SLS, and EBAM-EBM processes;
- Topological designs of metal products, including porous metals and metallic foams, applicable to PBF;
- Production of new metallic powder grades tolerant to AM-PBF;
- Development of process parameters, build strategies, and microstructural control of PBF-produced metallic components;
- Properties and performance of PBF-produced metallic alloys (e.g. mechanical, thermal, electrical and chemical (corrosion));
- Discontinuity characterization and microstructure-properties relationship in PBF manufactured alloys;
- Theoretical computations to further understand phenomena related to AM-BPF processing.





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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.

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