

Special Issue

Laser Powder Bed Fusion of Metals and Alloys: Microstructure and Mechanical Properties

Message from the Guest Editors

Laser powder bed fusion (LPBF) has been widely used in the fields of aerospace, energy, and medicine, among others, due to its high design freedom, the ability to produce complex components, and the reduced lead time and material waste. Understanding the underlying mechanisms of the evolution of microstructure in LPBF and harnessing the correlations between microstructure and properties are of great significance for additive manufacturing. In this Special Issue, original research articles and reviews are welcome. Research areas may include (but not limited to) the following topics:

Development of novel alloys and composites for LPBF;
Process monitoring and control;
Defect analysis and suppression methods;
Microstructural evolution in LPBF;
Advances in microstructure and property control;
Residual stresses and distortion in LPBF components;
Post-processing techniques;
Advanced applications of LPBF-processed metals and alloys;
Computational modeling and simulation;
Anisotropy in LPBF components.

Guest Editors

Dr. Xianglong Wang

Prof. Dr. Séan B. Leen

Prof. Dr. Zhenglong Lei

Deadline for manuscript submissions

20 November 2025



Applied Sciences

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.5



mdpi.com/si/212920

Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
appls-ci@mdpi.com

mdpi.com/journal/appls-ci





Applied Sciences

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.5



[mdpi.com/journal/
applsci](https://mdpi.com/journal/applsci)



About the Journal

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32,
20133 Milano, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)