

Special Issue

Laser Powder Bed Fusion of Metals Materials

Message from the Guest Editors

Laser Powder Bed Fusion (LPBF) is a prominent additive manufacturing (AM) technique used for fabricating complex metal and alloy components with high precision. This Special Issue aims to invite and promote reviews and original research works highlighting the following key aspects: **Microstructural Properties:** LPBF enables the creation of intricate microstructures, which significantly influence the mechanical properties of the final product. The fusion zone, grain structure, and phase transformations are critical areas of study. **Material Versatility:** LPBF is effective for single metals and dissimilar metal combinations, offering flexibility in material selection. This Special Issue includes and welcomes research on metallic alloys and hybrid materials, expanding its industrial applications. **Mechanical Performance:** Components produced via LPBF exhibit excellent mechanical properties, such as high strength and durability, though challenges like residual stresses and porosity remain. **Emerging Trends:** Advances in LPBF modelling, process optimization, and material innovation are driving its applicability in aerospace, medical, and automotive industries.

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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.

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