Special Issue

Laser Powder Bed Fusion, Direct Energy Deposition and Hybrid Manufacturing of Metals and Alloys

Message from the Guest Editor

Laser Powder Bed Fusion (L-PBF) and Direct Energy Deposition (DED) are nowadays versatile additive manufacturing processes with the capability to produce high-quality parts at high productivity rates and can be combined with subtractive manufacturing to improve surface characteristics. The industry is exponentially adopting these additive and hybrid manufacturing processes to fabricate functional parts for structural, biomedical, aerospace, and automotive applications among others. The introduction of L-PBF and DED parts is still experiencing barriers to reach acceptable levels of product integrity, with high-performance functions and under strict service requirements. The aim of this Special Issue is to collect valuable research in different fields affecting process and product integrity in L-PBF, DED and hybrid manufacturing, focusing on surface integrity, crystallography evolution, porosity, anisotropy effects, process calibration and laser–material interaction effects. Other research fields are welcome if their approach is related to the L-PBF, DED and hybrid manufacturing processes and product enhancement.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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