Special Issue

Microstructure and Mechanical Properties of Laser Additive Manufactured Metals

Message from the Guest Editor

Nowadays, only a limited number of commercial alloy systems can be processed through Laser Additive Manufacturing technologies, such as Laser Powder Bed Fusion or Directed Energy Deposition. At the same time, developing new alloy compositions is now becoming a key challenge to address in the additive manufacturing field. Finding the right window for the main process parameters and the conditions of the thermal treatments is a core procedure for reaching interesting mechanical performances for additive manufactured metals. This Special Issue aims to present the latest research related to the study of metals processed through laser additive manufacturing technologies, from process parameter definition to thermal treatment optimization focusing the attention on microstructural and mechanical characteristics of the processed materials. Reviews focused on innovations on metals for laser additive manufacturing are also welcome.

Keywords

- laser powder bed fusion
- directed energy deposition
- new alloys for additive manufacturing
- microstructures
- mechanical behavior

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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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