Special Issue

New Materials and Understandings in Selective Laser Melting (SLM)

Message from the Guest Editors

Selective laser melting (SLM) is a powder-bed fusion additive manufacturing technique used to fabricate intricate structures with unmatched degrees of complexity. Critical to this process is the feedstock material. Immense research efforts have been spent on using readily available alloys. However, in SLM, the material is irradiated with a laser beam causing rapid melting and solidification, imposing significantly different thermal experiences. Therefore, designing new alloys specifically tailored to the process or modifying available alloys is sought. The process–material–property relationship in SLM is markedly complex. An understanding of how SLM affects the process of designing new alloys is essential to heightening the momentum in this field. The focus of this Special Issue is on approaches to developing new materials tailored to SLM and the new understandings needed to overcome the barriers to wider adoption. It is our pleasure to invite you to submit a manuscript to this Special Issue. Full papers, communications and reviews are all welcome.

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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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