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Progress in Metal Additive Manufacturing and Metallurgy (Third Edition)

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Message from the Guest Editor

Dear Colleagues,

This Special Issue intends to address the latest progress in various facets of metal AM that constitute the entire value chain. Topics include, but are not limited to, the following:

- Directed energy deposition processes (DED, powder and wire);
- Powder bed fusion processes (PBF, EBM, and more); Hybrid-AM techniques;
- Process parameter-microstructure/defects-mechanical property relationships;
- Advanced characterization of AM utilizing SEM, TEM, synchrotron radiation diffraction, neutron scattering, and more;
- Post-build/in situ treatments (HIP, HT, machining, shot peening, hybrid manufacturing, and more) and their influence on material properties and quality;
- In-line monitoring techniques for process-build evaluation and control;
- Development of smart systems based on AI to analyze data and the development of adaptive control systems that use these data to adaptively control the process;
- AM process modeling, including areas such as temperature history, phase transformation, precipitation kinetics, microstructure, defects, cracks, and residual stress/distortion;
- Development of alloys customized for AM.



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Special Issue



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Editor-in-Chief

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Message from the Editor-in-Chief

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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