

New Book Information

Inkjet Based 3D Additive Manufacturing of Metals

Mojtaba Salehi, Manoj Gupta, Saeed Maleksaeedi, Nai Mui Ling Sharon

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Particular emphasis is placed on 3D inkjet printing of metals, which is reviewed here in great depth and for the first time. This is an ambient temperature technology which offers some unique advantages for printing metals and alloys, as well as composite and functionally graded materials.

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Summary:

Additive Manufacturing (AM) is a highly promising rapid manufacturing process. Based on incremental layer-upon-layer deposits, three dimensional components of high geometrical complexity can be produced; applications ranging from aerospace and automotive to biomedical industries. Laser, electron beam and wire-based techniques are reviewed.

Particular emphasis is placed on 3D inkjet printing of metals, which is reviewed here in great depth and for the first time. This is an ambient temperature technology which offers some unique advantages for printing metals and alloys, as well as composite and functionally graded materials. Material selection guidelines are presented and the various deposition techniques and post-printing treatments are discussed; together with the resulting properties of the printed components: Density, shrinkage, resolution and surface roughness, porosity-related and mechanical properties, as well as biological properties

The various metal printing techniques are compared with each other and case studies are referred to.

