



Additive manufacturing processes /

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Handbook

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Monografía

"Volume 24 provides information on the metals, ceramics, and polymers used in additive manufacturing (AM) and how they respond to the transformative forces and energies applied over the course of production. It covers all commercially relevant processes including vat polymerization, material jetting, powder bed fusion, directed energy deposition, binder jetting, material extrusion, and sheet lamination. It describes the production and characterization of powders, resins, and slurries, and the mechanisms by which they are transformed into solid structures and shapes. It explains how subtle differences in the shape, size, or surface chemistry of metal powders can have a profound effect on part quality, and how AM processed materials such as stainless steels, nickel-base superalloys, tool steels, cemented carbides, copper alloys, and precious metals compare with conventionally produced alloys. It discusses safe powder handling techniques, process modeling and simulation, material and manufacturing defects, post-processing, and in-line process monitoring and control. It also covers direct-write processes including microdispensing, aerosol jetting, thermal metal embedding, and laser-induced forward transfer."--

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