



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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Título: Additive manufacturing processes edited by David L. Bourell, William Frazier, Howard Kuhn, Mohsen Seifi

Editorial: Materials Park, OH ASM International 2020 2020

Descripción física: 1 online resource illustrations (some color)

Mención de serie: ASM handbook volume 24

Nota general: "Selected articles were published online first in advance of the full volume release. The volume was prepared under the direction of the ASM International Handbook Committee."--Publication history page, viewed on April 18, 2022

Bibliografía: Includes bibliographical references and index

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ISBN: 9781627082907 electronic) 1627082905 electronic) 9781627082884 print) 1627082883 print)

Materia: Additive manufacturing- Handbooks, manuals, etc. Fabrication additive- Guides, manuels, etc. Additive manufacturing

Autores: Bourell, David Lee, editor Frazier, William E., editor Kuhn, Howard A., editor Seifi, Mohsen, editor

Entidades: ASM International. Handbook Committee issuing body ASM International publisher

Enlace a formato físico adicional: Print version Additive manufacturing processes. Materials Park, Ohio : ASM International, [2020] 1627082883 9781627082884 (OCOLC)1144093676

Punto acceso adicional serie-Título: ASM Handbook v. 24

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