



Additive manufacturing design and applications /

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handbooks.

Handbooks and manuals.

Handbooks and manuals.

Guides

et manuels.

Monografía

"Volume 24A provides a comprehensive review of additive manufacturing (AM) design fundamentals and applications. The primary focus of the volume is on metallic systems with limited emphasis on polymers and ceramics where applicable. The first five divisions provide an in-depth review of each of the key aspects of the entire AM value chain. The materials/process development division discusses AM process-structure-property relationships, process optimization and defects, and material/process modeling. The design principles division includes coverage of design rules, part consolidation and assemblies, and simulation-driven design. In the data management division, data analytics, data security, and data sharing through a common data model are discussed. Next, the mechanical property characterization division includes discussion on fatigue, tensile, hardness, and other property testing. The AM non-destructive evaluation (NDE) division discusses surface and geometrical characterization, ultrasonic testing, radiography, computed tomography, and resonant ultrasound spectroscopy. Included in the AM in-situ process control and monitoring division are articles on machine learning for anomaly detection, in-process thermography, laser powder-bed fusion process control, and in-situ x-ray imaging. The applications division reviews key sectors that are embracing and adopting AM technologies. The market sectors are aviation, space flight, medical, automotive, oil and gas, construction, energy, and electronics. The last two divisions cover AM standards, qualification, and certification, as well as environmental, economic, and business concerns."--

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