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Nota di contenuto	Chapter 1: Challenges in Additive Manufacturing: Influence of Process Parameters on Induced Physical Properties of Printed Parts -- Chapter 2: Additive Manufacturing Incorporated Carbon Nanotubes (CNTs); Advances in biomedical domain -- Chapter 3: Formation, testing, and deposition of bioactive material using thermal spray additive manufacturing technique -- Chapter 4: Controlled Oxide Deposition Improves Mechanical and Biomedical Applications of Titanium Alloy -- Chapter 5: Instrumentation and Monitoring of Additive Manufacturing Processes for the Biomedical Applications -- Chapter 6: A Concise Study on Tribological Properties of Additive Manufactured Biomaterials -- Chapter 7: Role and Scope of OEE to Improve Additive Manufacturing Processes in Bio-Medical Industries -- Chapter 8: Corrosion Performance of Additively Manufactured Metallic Biomaterials: A Review -- Chapter 9: Emerging Functionally Graded Materials for Bio-Implant Applications- Design and Manufacturing -- Chapter 10: Biomechanical Evaluation of Load Transfer and Stability in a Corrugated Hip Stem: A Comparative Analysis -- Chapter 11: Applications of 3D Printing in

Medical, Engineering, Agricultural and Other Sectors.

Sommario/riassunto

This contributed volume presents the latest research on additive manufacturing (AM) or 3D printing, one of the key techniques of novel medical devices, which can process complicated or customized structures to match the properties of human tissues. AM allows for the fabrication of devices with optimal architectures, complicated morphologies, surface integrity, and regulated porosity and chemical composition. Various AM methods can now consistently fabricate dense products for a variety of materials, comprising steels, titanium alloys, Co-Cr alloys, metal-based composites, and nanocomposites. This book elucidates the chronology of various techniques that are categorized under additive manufacturing. Moreover, the futuristic techniques or advancements in this area are also described. The available literature focuses on the microstructure and various properties of 3D-printed alloys. However, the research on the wear characteristics, corrosion resistance, and biocompatibility of 3D-printed technology for biomedical applications is limited. This book comprises the helicopter view of different surface analysis trends of additive manufactured alloys. The book can be a valuable reference for beginners, researchers, and professionals interested in bioimplant manufacturing and allied fields.
