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ISBN	9789819971008
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (255 pages)
Disciplina	610.284
Soggetti	Biomedical engineering Medicine - Research Biology - Research
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Ch 1. State of the Art Overview and Recent Trends in Biomedical Devices Using Digital Manufacturing: Opportunities, Limitation and Current Market -- Ch 2. Futuristic Biomaterials for 3D Printed Healthcare Devices -- Ch 3. Design and manufacturing of 3D printed sensors for biomedical applications -- Ch 4. Role of Sensing integrated prosthetic Socket in Comfort -- Ch 5. Integrating Advanced Technologies in Post-operative Rehabilitation: 3D-Knitting, 3D-Printed Electronics, and Sensor Embedded Textiles -- Ch 6. Augmented Reality Interface for Additive Manufacturing of Biomedical Applications -- Ch 7. Design Tools and Methods for Design for AM of Medical Devices -- Ch 8. Modular Product Architecture to Design and Fabricate Prosthetic and Orthotic Products by 3D Printing -- Ch 9. Design and Development of 3D Printing on Bioinks and Biomaterials for Implants and Tissue Engineering -- Ch 10. 3D-Printed Smart Implants in Orthopedic Surgery -- Ch 11. Flexible and Embedded 3D Printed Electronic Sub-System in Healthcare Product -- Ch 12. 3D Printing of Pharmaceutical products using AI Technology -- Ch 13. Investigation of corrosion behavior on TI-6AL-4V alloy orthopedic implants using surface coating technique.
Sommario/riassunto	This book coherently presents the advances in technological principles,

processes, and methods of Additive Manufacturing (AM), Augmented reality (AR), and Internet of things (IoT) in biomedical technology. It offers an overview of these high-impact technologies in terms of materials, processes, and in-situ monitoring of fabricating biomedical devices, implants, and prosthetics. Furthermore, the book also aimed to cover pedagogical applications, including the design and development of high-fidelity anatomical and hybrid physiological human models, for medical and design students and clinicians for learning, understanding, and gaining insights into the structures and functions of human organs and pathology. In turn, the book also discusses the applications of artificial intelligence in the 3-D printing of pharmaceuticals. This book is a useful resource for manufacturers, scientists, engineers, and young research scholars understand disruptive technology's real potential in biomedical applications.