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Nota di contenuto	Part 1 -- 1 Interactions between the physiological environment and titanium-based implant materials – from understanding to control -- 2 Nanoscale surface Engineering and Characterization of Biomaterial -- 3 Progress of Nanotechnology-based Detection and Treatment of Alzheimer's Disease Biomarkers -- 4 Biomaterials: Types and Applications -- Part 2 -- 5 Additive Manufacturing of Ti and its alloy-based Bioimplants for Orthopaedic Applications -- 6 Physico-chemical Modifications of Magnesium and Alloys for Biomedical Applications -- 7 Metallic Foams in Bone Tissue Engineering -- 8 Surface modification of metallic biomaterials for cardiovascular cells regulation and biocompatibility improvement -- 9 Advancement of spinel ferrites for biomedical application -- Part 3 -- 10 Functionalized 3D bioactive

polymeric materials in tissue engineering and regenerative medicine -- 11 Polymer matrixes used in wound healing applications. 12 Conductive Polymers for Cardiovascular Applications -- 13 Engineered polymeric materials/nanomaterials for growth factor/drug delivery in bone tissue engineering applications -- 14 Surface engineering of polymeric materials for bone tissue engineering -- 15 Antibacterial Surface Modification to Prevent Biofilm Formation on Polymeric Biomaterials -- 16 Polymer Surface Engineering in the Food Packaging Industry -- 17 Polymeric Membranes in Waste-water Treatment -- 18 Functionalized Fluoropolymer Membrane for Fuel Cell Applications -- Part 4 -- 19 Bioceramics for Biomedical Applications -- 20 Applications of nanomaterials in the textile industry -- 21 Properties and characterization of advanced composite materials -- 22 Properties and characterization of advanced composite materials -- 23 Nano composites application in sewage treatment and degradation of persistent pesticides used in agriculture -- 24 Biomimetic Mineralization of Electrospun PCL based Composite Nanofibrous Scaffold for hard tissue Engineering. .

Sommario/riassunto

This book provides a comprehensive overview of the latest advances in a wide range of biomaterials for the development of smart and advanced functional materials. It discusses the fundamentals of bio-interfacial interactions and the surface engineering of emerging biomaterials like metals and alloys, polymers, ceramics, and composites/nanocomposites. In turn, the book addresses the latest techniques and approaches to engineering material surfaces/interfaces in, e.g., implants, tissue engineering, drug delivery, antifouling, and dentistry. Lastly, it summarizes various challenges in the design and development of novel biomaterials. Given its scope, it offers a valuable source of information for students, academics, physicians and particularly researchers from diverse disciplines such as material science and engineering, polymer engineering, biotechnology, bioengineering, chemistry, chemical engineering, nanotechnology, and biomedical engineering for various commercial and scientific applications.