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| Nota di contenuto | Part I: Innovative antimicrobial and osteoinductive therapeutics -- Advances in antimicrobial and osteoinductive biomaterials -- Recent Advances in Controlled Release Technologies for the Co-Delivery of Antimicrobial and Osteoconductive Therapeutics -- Biofilm-inhibiting and osseointegration-promoting orthopedic implants with novel nanocoatings -- Three dimensional (3D) and drug-eluting nanofiber coating for prosthetic implants -- Cationic antimicrobial coatings with osteoinductive properties -- Peptide Functionalized Biomaterials with Osteoinductive or Anti-biofilm Activity -- Construction of bio-functionalized ZnO coatings on titanium implants with both self-antibacterial and osteoinductive properties -- Gasotransmitters: antimicrobial properties and impact on cell growth for tissue engineering -- Carbon nanotubes: Their antimicrobial properties and applications in bone tissue regeneration -- Part II: Interface tissue engineering and advanced material for scaffolds -- Fracture healing and progress towards successful repair -- Animal models for bone tissue engineering and osteoinductive biomaterial research -- Bioprinting in Tissue Engineering -- Additive Manufacturing of Bio-scaffolds for Bone Regeneration -- Anti-biofouling and Antimicrobial |

Biomaterials for Tissue Engineering -- Osteoinductive and osteoconductive biomaterials -- Bimetallic nanoparticles for biomedical applications: a review -- Peptide-mediated Bone Tissue Regeneration -- Antibody mediated osseous regeneration - a new strategy for bioengineering -- Extracellular matrix-based materials for bone regeneration -- Calcium Phosphate Biomaterials for Bone Tissue Engineering: Properties and Relevance in Bone Repair -- Bioactive Glasses in Orthopedic Applications -- Advances in Tissue Engineering and Regeneration -- SCAFFOLDS FOR TISSUE ENGINEERING: A state of the art review concerning types, properties, materials, processing and characterization -- Recent Developments of Zn-Based Medical Implants -- Recent physical interaction-based bioadhesives -- Tellurium, the forgotten element: a review for the properties, processes and biomedical applications of the bulk and nanoscale metalloid -- Index.

Sommario/riassunto

This book covers the key basics of tissue engineering as well as the latest advances in the integration of both antimicrobial and osteoinductive properties. Topics covered include osteoconductive and osteoinductive biomaterials (calcium phosphate, bone morphogenetic protein, peptides, antibodies, bioactive glasses, nanomaterials, etc.) and scaffolds. Research integrating both antimicrobial/biofilm-inhibiting and osteoinductive/osteoconductive properties and their co-delivery is detailed and their roles in clinical success are discussed. Combined with its companion volume, Racing for the Surface: Antimicrobial and Interface Tissue Engineering, this book bridges the gap between infection and tissue engineering, and is an ideal book for academic researchers, clinicians, industrial engineers and scientists, governmental representatives in national laboratories, and advanced undergraduate students and post-doctoral fellows who are interested in tissue engineering and regeneration, infection, and biomaterials and devices.