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Nota di contenuto	Title page; Copyright page; Preface; Part 1: Functional Coatings and Adhesives; Chapter 1: Bio-inspired Coatings and Adhesives; 1.1 Introduction; 1.2 The Interfacial Biochemistry of a Mussel Adhesive; 1.3 Tough Coating Proteins in the Mussel Thread; 1.4 Mussel-inspired Coatings and Adhesives; 1.5 Conclusions and Future Research Avenues for Bio-inspired Adhesives and Coatings; References; Chapter 2: Advancement of Surface by Applying a Seemingly Simple Sol-gel Oxide Materials; 2.1 Introduction; 2.2 Are Simple Sol-gel Oxides Only Simple Materials?; 2.3 Hybrid Coating Materials 2.4 Functionalized Oxide Coatings2.5 Coatings for Cells; 2.6 Sol-gel Materials as Interface Materials; 2.7 Conclusions; References; Chapter 3: Femtosecond Laser Texturing of Bio-based Polymer Films for Surface Functionalization; 3.1 Introduction; 3.2 Naturally Derived Biomaterials; 3.3 Surface Modification Features; 3.4 Mechanisms of Laser-tissue Interaction; 3.5 Laser-based Methods for Surface Treatment of Biomaterials; 3.6 Conclusion; Acknowledgments; References; Chapter

4: Engineered Electromagnetic Surfaces and Their Applications; 4.1 Introduction; 4.2 Impedance Boundary Condition
4.3 Metasurfaces Based on Metallic Strips4.4 Metasurfaces Based on Circular Inclusions; 4.5 Metasurfaces Based on Crossed Dipoles; References; Chapter 5: Structural and Hydroxyapatite-like Surface Functionalization of Advanced Biomimetic Prototype Interface for RA Endoprostheses to Enhance Osteoconduction and Osteointegration; 5.1 Introduction; 5.2 Biomimetic Multi-spiked Connecting Scaffold Prototype - The Promising Breakthrough in Bone-implant Advanced Interfacing in Joint Resurfacing Endoprostheses Fixation Technique
5.3 Bioengineering Design of the MSC-scaffold Prototype, Its Additive Manufacturing and Post-SLM_processing of Bone Contacting Surfaces5.4 Structural Pro-osteocondensation Functionalization of the MSC-scaffold Interfacing System for Biomimetic Entirely Cementless RA Endoprostheses; 5.5 Hydroxyapatite-like Functionalization of Bone Contacting Surfaces of the MSC-scaffold to Enhance Osteointegration; 5.6 Conclusions; Acknowledgments; References; Part 2: Engineering of Nanosurfaces; Chapter 6: Biosynthesis of Metal Nanoparticles and Graphene; 6.1 Introduction
6.2 Synthesis of Gold and Silver Nanoparticles Using Microorganisms6.3 Synthesis of Gold and Silver Nanoparticles Using Fruit Extract; 6.4 Synthesis of Gold and Silver Nanoparticles Using Plant Extract; 6.5 Synthesis of Gold and Silver Nanoparticles Using Honey; 6.6 Synthesis of Gold and Silver Nanoparticles Using Animal Tissue; 6.7 Synthesis of Semiconductor Nanoparticles from Plant, Fruit Extract and Honey; 6.8 Biosynthesis of Other Nanoparticles; 6.9 Biosynthesis of Graphene; 6.10 Applications of Metal Nanoparticles and Graphene; 6.11 Future Trends and Prospects; 6.12 Conclusions
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