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Nota di contenuto	Chapter 1. Role of synthetic and natural biomaterials in modulating the autoimmune response -- Chapter 2. Nanotechnology-based biosensors in medicine -- Chapter 3. Materials from natural resources for the application of bone tissue engineering -- Chapter 4. Hydroxyapatite is a next-generation theranostic probe for tissue engineering and biomedical application -- Chapter 5. Green synthesis of metallic nanoparticles and various biomedical applications -- Chapter 6. Functionalized carbon nanotube for various disease treatment -- Chapter 7. Nanotechnology: Changing the world of animal health and veterinary medicine -- Chapter 8. Bioinspired materials inherited with antimicrobial properties for tissue engineering -- Chapter 9. 3D and 4D bioprinting technology for tissue engineering applications -- Chapter 10. Hemocompatibility of differently modified polymeric nanofibers: Current progress in the biomedical industry -- Chapter 11. Polyurethane nanofibers fabricated by electrospinning as drugcarriers

systems for the treatment of cancer -- Chapter 12. Recent trends in the application of materials for cancer therapy and diagnosis -- Chapter 13. Application of bioactive compounds and biomaterials in promoting cell differentiation, proliferation, and regenerating tissue -- Chapter 14. Materials for gene delivery systems -- Chapter 15. Natural hydrogels as wound dressing for skin wound healing applications -- Chapter 16. Nanomaterial applications in cancer therapy and diagnosis -- Chapter 17. Nanocellulose as a sustainable nanomaterial for films and coating layers via spray-coating and applications -- Chapter 18. Nanoparticles-based drug delivery system for beginners -- Chapter 19. Osteoarthritis: Novel insights in treatment -- Chapter 20. Promoting the Bio-potency of Bioactive Compounds through Nanoencapsulation -- Chapter 21. Review on green synthesis, modification, characterization, properties, and applications of palladium nanoparticles in biomedical applications -- Chapter 22. Innovative nanomaterials with profound antibacterial action applied in biomedical sciences -- Chapter 23. Musculoskeletal pains and its common diseases: Novel insights in treatments using biomaterials -- Chapter 24. Electrospun Cellulose and Derivatives-Based Nanofibers Loaded with Bioactive Agents for Wound Dressing Applications -- Chapter 25. Co-Delivery of Anticancer Drugs Using Polymer-Based Nanomedicines for Lung and Prostate Cancer Therapy -- Chapter 26. Silver nanoparticles incorporated textile substrate for antimicrobial applications -- Chapter 27. Recent advancement of gelatin for tissue engineering applications -- Chapter 28. Biomedical applications of the fused filament fabrication (FFF) technology -- Chapter 29. Role of Stem cells in the Delivery of Essential Pharmaceuticals -- Chapter 30. Biomaterials in autoimmune diseases -- Chapter 31. Regulatory and ethical issues raised by the utilization of nanomaterials.

Sommario/riassunto

This book examines the interactions of nanomaterials with the biological system. The chapters of the book explore the natural and synthetic biomaterials that modulate immune responses for their applications in drug delivery and tissue engineering. Further, the book discusses the implications of the physiochemical properties of nanoparticles and their microenvironment on their interactions with biological systems. The chapters also present the recognitive capabilities of biomaterials for the development of novel strategies for the detection and treatment of autoimmune disorders. The book also introduces nanotechnology platforms for drug delivery and highlights current and emerging nanotechnologies that could enable novel classes of therapeutics. Towards the end, the book reviews the efficiency of drug-loaded nanoparticles in modulating the functioning of the biological milieu for improved disease treatment. Lastly, the book outlines the ethical issues regarding the use of nanoparticles for in vitro and in vivo applications. Given its scope, it is a valuable resource for graduate students and researchers interested in understanding the biomedical applications of nanoparticles and their interactions with the biological milieu.
