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Sommario/riassunto

This book presents a focused overview of biocompatible nanocomposites, emphasizing recent advancements in material design, synthesis techniques, and their expanding applications in biomedicine. It spans key areas such as regenerative medicine, drug delivery, cancer therapy, biosensing, diagnostic imaging, and vaccine delivery — illustrating how these materials are transforming modern healthcare. The book reviews widely used biomaterials including polycaprolactone, bioactive ceramics, and polymer-based hybrids, discussing their roles in cardiovascular, orthopedic, dental, maxillofacial, and ophthalmic applications. It further explores stimuli-responsive systems and emerging technologies, such as 4D printing. Real-world case studies and practical insights underscore the clinical impact and translational potential of these nanocomposites. This comprehensive resource is intended for researchers, clinicians, postgraduate students, and professionals in nanotechnology and biomedical sciences to foster innovation in patient-centered healthcare solutions.