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Sommario/riassunto

The book provides an overview of different nanoparticles, their classification, and their applications in healthcare, food sciences, environmental sciences, and agricultural sciences. The introductory chapters discuss different types of nanoparticles, their types, and their structural properties. The subsequent chapter examines factors that influence the biocompatibility and toxicity of NPs for the safe and sustainable development of emerging nanoparticles. The chapter systematically reviews the nanoparticle-based contrast agents employed in most common biomedical imaging modalities. The book further examines the applications of advanced nanoparticle design that are utilized for both non-personalized and precision applications for improving precision therapies. The book provides a comprehensive update on nanoparticles' toxic effects, the factors underlying their toxicity, and the mechanisms by which toxicity is induced. This book is an ideal guide for researchers and students interested in understanding the applications of nanoparticles in biomedical sciences and the healthcare sector.