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Sommario/riassunto	This book focuses on recent advances in dental gold alloys and gold nanoparticles (GNPs) for biomedical applications. Dental gold alloys combine several highly desirable mechanical properties, such as high strength, ductility, and elasticity, with extremely robust chemical stability in the mouth, known as high biocompatibility. The new edition presents advanced dental gold alloys for fixed dentures, evaluating the influence of individual elements on the mechanical and other characteristics of the alloys. In the section on the use of GNPs as novel gold biomaterials that provide a multifunctional platform for cellular

imaging, biosensing, and targeted drug delivery in tumor immunotherapy and photothermal therapy, their application for incorporation into creams and for rapid LFIA tests is demonstrated. Starting with a comprehensive review of the development and application of dental gold alloys, the book discusses the properties of materials that are crucial for dental applications, focusing on aspects such as microstructure, mechanical properties, chemical and corrosion stability, aging, biocompatibility, and color stability. The book then focuses on the use of GNPs in dental applications, delving into various GNP synthesis techniques to specifically tailor size, shape, and stability in biological media. The new supplement presents the scientific knowledge for the use of GNPs in creams and the studies needed to evaluate their safe use. The fact is that the characterization and safety assessment of nanoparticles and other nanomaterials in cosmetics is very challenging. Cosmetic creams are complex media with multiple components that can affect the physical and chemical properties of nanomaterials, alter their behavior and complicate the transfer of their toxicological aspects to different cosmetic formulations. In addition to these factors, it discusses how their route of exposure, surface chemistry, and how steric effects of their coating affect the biodistribution and determine the level of toxicity of GNPs in the human body. The final section presents the global manufacturers of GNPs and the characteristics of their products. This book contains reviews of the current literature and updated published experimental results and offers an attractive resource for practicing scientists and engineers working in the field of various types of gold-based biomaterials.