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Sommario/riassunto

Optical properties are among the most fascinating and useful properties of nanomaterials and have been extensively studied using a variety of optical spectroscopic techniques. A basic understanding of the optical properties and related spectroscopic techniques is essential for anyone who is interested in learning about nanomaterials of semiconductors, insulators or metal. This is partly because optical properties are intimately related to other properties and functionalities (e.g. electronic, magnetic, and thermal) that are of fundamental importance to many technological applications, such as energy conversion, chemical analysis, biomedicine, optoelectronics, communication, and radiation detection. Intentionally designed for upper-level undergraduate students and beginning graduate students with some basic knowledge of quantum mechanics, this book provides the first systematic coverage of optical properties and spectroscopic techniques of nanomaterials.