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Soggetti	Surfaces (Technology) Lasers Nanoscience
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Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction: wave optics near surfaces -- Optical interference near surfaces: interference substrates -- Intermediate field and a single point scatterer on a surface -- Spectral shifts from nano-emitters and finite size effects of the focal spot -- Microscopic origin of the index of refraction.
Sommario/riassunto	This book explores the physical phenomena underlying the optical responses of nanoscale systems and uses this knowledge to explain their behavior, which is very different to what is encountered on the macroscopic scale. In the first three chapters, the authors discuss important aspects of wave optics on surfaces and at small scales, such as the optical interference near surfaces, the physical origin of the index of refraction, and how imaging optical fields can be used to enhance resolution in optical diffraction microscopy. The last two chapters treat a concept on the consequence of the finite size of the focal spot in optical spectroscopy and how the index of refraction can be related to scattering of an ensemble of discrete scatterers. The concepts described here are important to understanding the optical properties of nanoparticles or nanostructured surfaces and are not covered in most fundamental optics courses. This book is designed for researchers and graduate students looking for an introduction to optics

at small scales.
