

1. Record Nr.	UNINA9911006649903321
Autore	Novotny Lukas
Titolo	Principles of nano-optics / / Lukas Novotny, Bert Hecht
Pubbl/distr/stampa	Cambridge, : Cambridge University Press, 2006
ISBN	9781107148727 1107148723 9781139637114 1139637118 9780511813535 0511813538 9780511166525 0511166524 9780511648243 0511648243 9780511167560 0511167563 9780511566721 0511566727 9780511167041 0511167040 9780511168116 051116811X
Descrizione fisica	1 online resource (xvii, 539 pages) : digital, PDF file(s)
Altri autori (Persone)	HechtBert <1968->
Disciplina	621.36 535
Soggetti	Nanostructured materials Near-field microscopy Quantum optics Photonics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.

Nota di contenuto

Cover; Half-title; Title; Copyright; Dedication; Contents; Preface; 1 Introduction; 2 Theoretical foundations; 3 Propagation and focusing of optical fields; 4 Spatial resolution and position accuracy; 5 Nanoscale optical microscopy; 6 Near-field optical probes; 7 Probe-sample distance control; 8 Light emission and optical interactions in nanoscale environments; 9 Quantum emitters; 10 Dipole emission near planar interfaces; 11 Photonic crystals and resonators; 12 Surface plasmons; 13 Forces in confined fields; 14 Fluctuation-induced interactions; 15 Theoretical methods in nano-optics
Appendix A Semianalytical derivation of the atomic polarizability
Appendix B Spontaneous emission in the weak coupling regime; Appendix C Fields of a dipole near a layered substrate; Appendix D Far-field Green's functions; Index

Sommario/riassunto

Nano-optics is the study of optical phenomena and techniques on the nanometer scale, that is, near or beyond the diffraction limit of light. It is an emerging field of study, motivated by the rapid advance of nanoscience and nanotechnology which require adequate tools and strategies for fabrication, manipulation and characterization at this scale. In this 2006 text the authors provide a comprehensive overview of the theoretical and experimental concepts necessary to understand and work in nano-optics. With a very broad perspective, they cover optical phenomena relevant to the nanoscale across diverse areas ranging from quantum optics to biophysics, introducing and extensively describing all of the significant methods. Written for graduate students who want to enter the field, the text includes problem sets to reinforce and extend the discussion. It is also a valuable reference for researchers and course teachers.
