

1. Record Nr.	UNINA9910818421203321
Autore	Fox Mark
Titolo	Optical properties of solids // Mark Fox
Pubbl/distr/stampa	Oxford ; ; New York : , : Oxford University Press, , 2010 ©2010
ISBN	9780191576720 0191576727
Edizione	[Second edition.]
Descrizione fisica	1 online resource (xvi, 396 pages) : illustrations
Collana	Oxford master series in physics ; ; 3. Condensed matter physics
Disciplina	530.4/12
Soggetti	Solids - Optical properties
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references (pages 376-386) and index.
Nota di contenuto	1. Introduction -- 2. Classical propagation -- 3. Interband absorption -- 4. Excitons -- 5. Luminescence -- 6. Quantum confinement -- 7. Free electrons -- 8. Molecular materials -- 9. Luminescence centres -- 10. Phonons -- 11. Nonlinear optics -- A. Electromagnetism in dielectrics -- B. Quantum theory of radiative absorption and emission -- C. Angular momentum in atomic physics -- D. Band theory -- E. Semiconductor p-i-n diodes.
Sommario/riassunto	"The second edition of this successful textbook provides an up-to-date account of the optical physics of solid state materials. The basic principles of absorption, reflection, luminescence, and light scattering are covered for a wide range of materials, including insulators, semiconductors and metals. The text starts with a review of classical optics, and then moves on to the treatment of optical transition rates by quantum theory. In addition to the traditional discussion of crystalline materials, glasses and molecular solids are also covered. The first edition included a number of subjects that are not normally covered in standard texts, notably semiconductor quantum wells, molecular materials, vibronic solid state lasers, and nonlinear optics. The basic structure of the second edition is unchanged, but all of the chapters have been updated and improved. Furthermore, a number of important new topics have been added, including:· Optical control of spin· Quantum dots· Plasmonics· Negative refraction· Carbon

nanostructures (graphene, nanotubes and fullerenes)- NV centres in diamond
The text is aimed at final year undergraduates, masters students and researchers. It is mainly written for physicists, but might also be useful for electrical engineers, materials scientists and physical chemists. The topics are written in a clear tutorial style with worked examples, chapter summaries and exercises. A solutions manual is available on request for instructors."--Provided by publisher.
