Record Nr. UNINA9911020170803321 Autore Quinten Michael Titolo Optical properties of nanoparticle systems: Mie and beyond // Michael Quinten Weinheim,: Wiley-VCH, c2011 Pubbl/distr/stampa **ISBN** 9786612889707 9781282889705 1282889702 9783527633159 3527633154 9783527633135 3527633138 9783527633142 3527633146 Edizione [4th ed.] Descrizione fisica 1 online resource (504 p.) Disciplina 535.028 Soggetti Nanoparticles - Optical properties **Nanophotonics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographic references (p. 441-477) and index. Optical Properties of Nanoparticle Systems; Contents; Preface; 1: Nota di contenuto Introduction; 2: Nanoparticle Systems and Experimental Optical Observables; 3: Interaction of Light with Matter - The Optical Material Function; 4: Fundamentals of Light Scattering by an Obstacle; 5: Mie 's Theory for Single Spherical Particles; 6: Application of M ie 's Theory; 7: Extensions of M ie 's Theory; 8: Limitations of Mie 's Theory - Size and Quantum Size Effects in Very Small Nanoparticles; 9: Beyond Mie ' s Theory I - Nonspherical Particles; 10: Beyond Mie 's Theory II - The Generalized Mie Theory 11: The Generalized Mie Theory Applied to Different Systems12: Densely Packed Systems; 13: Near - Field and SERS; 14: Effective

Medium Theories; References; Color Plates; Index

Filling the gap for a description of the optical properties of small

Sommario/riassunto

particles with sizes less than 1000 nm and to provide a comprehensive overview on the spectral behavior of nanoparticulate matter, this is the most up-to-date reference on the optical physics of nanoparticle systems. The author, an expert in the field with both academic and industrial experience, concentrates on the linear optical properties, elastic light scattering and absorption of single nanoparticles and on reflectance and transmittance of nanoparticle matter.