1. Record Nr. UNINA9910254170403321

Autore	Gouesbet Gérard
Titolo	Generalized Lorenz-Mie Theories / / by Gérard Gouesbet, Gérard Gréhan
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
Edizione	[2nd ed. 2017.]
Descrizione fisica	1 online resource (XXXVII, 331 p. 25 illus., 16 illus. in color.)
Disciplina	620.1064
Soggetti	Fluid mechanics Optics Electrodynamics Topological groups Lie groups Microwaves Optical engineering Engineering Fluid Dynamics Classical Electrodynamics Topological Groups, Lie Groups Microwaves, RF and Optical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Background in Maxwell’s Electromagnetism and Maxwell’s Equations -- Resolution of Special Maxwell‘s Equations -- Generalized Lorenz-Mie Theories in the Strict Sense, and other GLMTs -- Gaussian Beams, and Other Beams -- Finite Series -- Special Cases of Axisymmetric and Gaussian Beams -- The Localized Approximation and Localized Beam Models -- Applications, and Miscellaneous Issues -- Conclusion.
Sommario/riassunto	This book explores generalized Lorenz–Mie theories when the illuminating beam is an electromagnetic arbitrary shaped beam relying on the method of separation of variables. The new edition includes an additional chapter covering the latest advances in both research and applications, which are highly relevant for readers. Although it

particularly focuses on the homogeneous sphere, the book also considers other regular particles. It discusses in detail the methods available for evaluating beam shape coefficients describing the illuminating beam. In addition it features applications used in many fields such as optical particle sizing and, more generally, optical particle characterization, morphology-dependent resonances and the mechanical effects of light for optical trapping, optical tweezers and optical stretchers. Furthermore, it provides various computer programs relevant to the content.