1. Record Nr. UNINA9910300381803321

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| Autore | Stenzel Olaf |
| Titolo | Optical Coatings [[electronic resource] ] : Material Aspects in Theory and Practice / / by Olaf Stenzel |
| Pubbl/distr/stampa | Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014 |
| ISBN | 3-642-54063-5 |
| Edizione | [1st ed. 2014.] |
| Descrizione fisica | 1 online resource (391 p.) |
| Collana | Springer Series in Surface Sciences, , 0931-5195 ; ; 54 |
| Disciplina | 667.9<br>681<br>681.4<br>681/.4 |
| Soggetti | Surfaces (Physics)<br>Interfaces (Physical sciences)<br>Thin films<br>Microwaves<br>Optical engineering<br>Optical materials<br>Electronic materials<br>Lasers<br>Photonics<br>Materials—Surfaces<br>Surface and Interface Science, Thin Films<br>Microwaves, RF and Optical Engineering<br>Optical and Electronic Materials<br>Optics, Lasers, Photonics, Optical Devices<br>Surfaces and Interfaces, Thin Films |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Basics -- Experimental determination of thin film optical constants -- Remarks on available coating materials -- Material aspects of coating design (incl. computational manufacturing) -- High index oxide |

materials: Porous versus dense coatings -- Strongly porous low index materials -- Dielectric mixtures as coating materials (including applications in graded index coatings) -- Mixtures with metal inclusions -- Examples on coatings with a periodic surface structure -- Concluding remarks.

Sommario/riassunto

Optical coatings, i.e. multilayer stacks composed from a certain number of thin individual layers, are an essential part of any optical system necessary to tailor the properties of the optical surfaces. Hereby, the performance of any optical coating is defined by a well-balanced interplay between the properties of the individual coating materials and the geometrical parameters (such as film thickness) which define their arrangement. In all scientific books dealing with the performance of optical coatings, the main focus is on optimizing the geometrical coating parameters, particularly the number of individual layers and their thickness. At the same time, much less attention is paid to another degree of freedom in coating design, namely the possibility to tailor optical material properties to an optimum relevant for the required specification. This book, on the contrary, concentrates on the material aside of the problem. After a comprehensive review of the basics of thin film theory, traditional optical coating material properties and their relation to the efficiency of coating design methods, emphasis is placed on novel results concerning the application of material mixtures and nanostructured coatings in optical coating theory and practice, including porous layers, dielectric mixtures as well as metal island films for different applications.