

1. Record Nr.	UNINA9910141254703321
Autore	Skorobogatiy Maksim <1974->
Titolo	Nanostructured and subwavelength waveguides [[electronic resource]] : fundamentals and applications // Maksim Skorobogatiy
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2012
ISBN	1-283-91720-3 1-118-34317-4 1-118-34322-0 1-118-34324-7
Descrizione fisica	1 online resource (336 p.)
Collana	Wiley series in materials for electronic and optoelectronic applications
Classificazione	TEC030000
Disciplina	621.3815/2
Soggetti	Optical wave guides Optoelectronic devices Nanostructured materials
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	Nanostructured and Subwavelength Waveguides; Contents; Series Preface; Preface; 1 Introduction; 1.1 Contents and Organisation of the Book; 1.2 Step-Index Subwavelength Waveguides Made of Isotropic Materials; 1.3 Field Enhancement in the Low Refractive Index Discontinuity Waveguides; 1.4 Porous Waveguides and Fibres; 1.5 Multifilament Core Fibres; 1.6 Nanostructured Waveguides and Effective Medium Approximation; 1.7 Waveguides Made of Anisotropic Materials; 1.8 Metals and Polar Materials; 1.9 Surface Polariton Waves on Planar and Curved Interfaces; 1.9.1 Surface Waves on Planar Interfaces 1.9.2 Surface Waves on Wires 1.9.3 Plasmons Guided by Metal Slab Waveguides; 1.9.4 Plasmons Guided by Metal Slot Waveguides; 1.10 Metal/Dielectric Metamaterials and Waveguides Made of Them; 1.11 Extending Effective Medium Approximation to Shorter Wavelengths; 2 Hamiltonian Formulation of Maxwell Equations for the Modes of Anisotropic Waveguides; 2.1 Eigenstates of a Waveguide in Hamiltonian Formulation; 2.2 Orthogonality Relation between the Modes of a Waveguide Made of Lossless Dielectrics; 2.3 Expressions for the Modal Phase Velocity; 2.4 Expressions for the Modal Group Velocity

2.5 Orthogonality Relation between the Modes of a Waveguide Made of Lossy Dielectrics
 2.6 Excitation of the Waveguide Modes; 2.6.1 Least Squares Method; 2.6.2 Using Flux Operator as an Orthogonal Dot Product; 2.6.3 Coupling into a Waveguide with Lossless Dielectric Profile; 2.6.4 Coupling into a Waveguide with Lossy Dielectric Profile; 3 Wave Propagation in Planar Anisotropic Multilayers, Transfer Matrix Formulation; 3.1 Planewave Solution for Uniform Anisotropic Dielectrics; 3.2 Transfer Matrix Technique for Multilayers Made from Uniform Anisotropic Dielectrics; 3.2.1 TE Multilayer Stack 3.2.2 TM Multilayer Stack
 3.3 Reflections at the Interface between Isotropic and Anisotropic Dielectrics; 4 Slab Waveguides Made from Isotropic Dielectric Materials. Example of Subwavelength Planar Waveguides; 4.1 Finding Modes of a Slab Waveguide Using Transfer Matrix Theory; 4.2 Exact Solution for the Dispersion Relation of Modes of a Slab Waveguide; 4.3 Fundamental Mode Dispersion Relation in the Long-Wavelength Limit; 4.4 Fundamental Mode Dispersion Relation in the Short-Wavelength Limit; 4.5 Waveguides with Low Refractive-Index Contrast; 4.6 Single-Mode Guidance Criterion
 4.7 Dispersion Relations of the Higher-Order Modes in the Vicinity of their Cutoff Frequencies
 4.8 Modal Losses Due to Material Absorption; 4.8.1 Waveguides Featuring Low Loss-Dispersion; 4.8.2 Modal Losses in a Waveguide with Lossless Cladding; 4.8.3 Modal Losses in a Waveguide with Low Refractive-Index Contrast; 4.9 Coupling into a Subwavelength Slab Waveguide Using a 2D Gaussian Beam; 4.9.1 TE Polarisation; 4.9.2 TM Polarisation; 4.10 Size of a Waveguide Mode; 4.10.1 Modal Size of the Fundamental Modes of a Slab Waveguide in the Long-Wavelength Limit
 4.10.2 Modal Size of the Fundamental Modes of a Slab Waveguide in the Short-Wavelength Limit

Sommario/riassunto

"This book presents semi-analytical theory and practical applications of a large number of subwavelength and nanostructured optical waveguides. The contents are organized around four major themes: guidance properties of subwavelength waveguides made of homogeneous anisotropic materials; description of guidance by nanostructured waveguides using effective media approximation; operation of nanostructured waveguides at shorter wavelength at the limit of validity of effective medium approximation; and practical applications of subwavelength and nanostructured waveguides. What makes the book unique is that it collects in a single place a large number of analytical solutions which are derived in a long wavelength regime for a plethora of practically important waveguides and fibers than researchers currently use or study worldwide. The waveguides considered include planar and circular isotropic and anisotropic waveguides, as well as surface waves on planar, and circular surfaces, and the waveguide materials include dielectrics, metals and polar materials. After analysis of the basic waveguide structures it considers waveguides made of the nanostructured materials. Many practical applications are then rigorously detailed including low-loss low-dispersion guidance using porous THz waves, long-range propagation of plasmons in thin metallic films, and leakage spectroscopy of leaky plasmonic modes propagating on thin metallic films. A companion website (password-protected) provides a fully functional transfer matrix code PolyTMat (Matlab) which is able to treat any multilayer waveguide of planar or circular geometry made of anisotropic dielectrics. "--

2. Record Nr.	UNINA9910557563303321
Autore	Moreira Helena
Titolo	Smoking and Schizophrenia
Pubbl/distr/stampa	Frontiers Media SA, 2020
Descrizione fisica	1 online resource (111 p.)
Soggetti	Medicine and Nursing Psychiatry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact