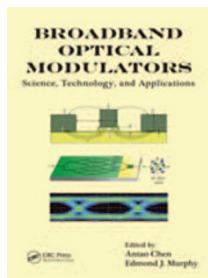


New titles at a glance

Broadband Optical Modulators

by Antao Chen & Edmond J. Murphy
CRC PRESS. 568PP. £82

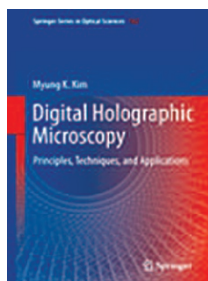


This book provides a comprehensive overview of state-of-the-art optical modulator science and technology. It covers a range of fundamental topics, including the electro-optic effect in nonlinear optical crystals and semiconductors.

The book addresses the optical and electro-optic properties of relevant materials such as traditional single-crystalline lithium niobate, silicon and group III–V compound semiconductors, as well as emerging materials such as electro-optic polymers and organic nonlinear optical crystals. For each type of modulator, the authors discuss the typical device design, fabrication techniques and factors that are important to modulator performance.

Digital Holographic Microscopy

by Myung K. Kim
SPRINGER. 256PP. €99.95

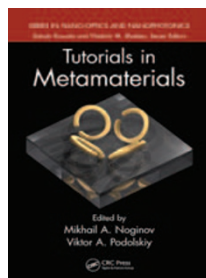


Digital holography is an emerging field of new paradigm in general imaging applications. This volume presents an introduction to the theoretical and numerical principles of digital holography, with particular

emphasis on techniques and applications for microscopy, while also reviewing research activity in the field. Topics covered include the general theory of diffraction and holography formation, as well as practical instrumentation and experimentation of digital holography. The various numerical techniques that give rise to the unique and versatile capabilities of digital holography are also described. Representative special techniques and the applications of digital holography are discussed. This book is intended for researchers interested in developing new techniques and exploring new applications of digital holography.

Tutorials in Metamaterials

by Mikhail A. Noginov & Viktor A. Podolskiy
CRC PRESS. 308PP. £49.99

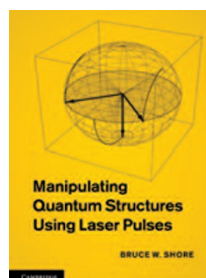


Over the past decade, metamaterials have transformed concepts such as super-resolution imaging and optical cloaking from the realm of science fiction to practical laboratory demonstrations. The next

stage is to explore how such technology can be used in everyday life. This new era of optical metamaterials requires experimental and theoretical methods capable of analysing optical behaviour across a wide range of scales — from the nanometre scale of individual inhomogeneity to the micrometre scale (and larger) of metamaterials-based devices. The chapters in this book are designed as self-contained tutorials that describe photonic metamaterials and state-of-the-art research in the field of metamaterials.

Manipulating Quantum Structures Using Laser Pulses

by Bruce W. Shore
CAMBRIDGE UNIVERSITY PRESS. 586PP. US\$120



The use of laser pulses to alter the internal quantum structure of individual atoms and molecules has applications in quantum information processing, the coherent control of chemical reactions and quantum-state engineering. This volume presents the underlying theory of quantum-state manipulation for researchers and graduate students. The equations and solution techniques provided can be applied to complex multilevel quantum systems. The book also provides background theory for applying quantum-state engineering to isolated atoms or trapped ions, simple molecules and atoms embedded in solids. Particular attention is given to the ways in which quantum changes can be displayed

(and therefore controlled) through graphical interfaces.

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Femtosecond Laser-Matter Interactions

by Eugene Gamaly
PAN STANFORD PUBLISHING. 368PP. US\$149.95

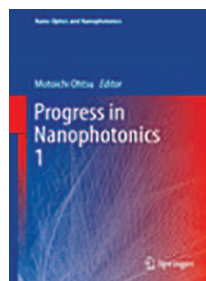


This book discusses the interaction of laser pulses with solids at non-relativistic intensities, covering phenomena from subtle atomic motion on the nanoscale to the generation of extreme pressure and

temperature in the interaction zone confined inside a solid. Associated mathematics is kept to a minimum, which makes the book highly engaging and accessible to students and researchers throughout all fields of science and engineering. Useful summaries at the end of each chapter provide estimates for many of the major parameters found in interaction experiments.

Progress in Nanophotonics 1

by Motoichi Ohtsu
SPRINGER. 236PP. €99.95



This hardback focuses on recent progress in nanophotonic technology for the development of novel nano-optical devices, fabrication technology and security systems. It begins with a review of 'dressed photons'

and their applications to devices, fabrication and systems. Further topics include DNA process for quantum-dot chains, photon-enhanced emission microscopy, near-field spectroscopy of metallic nanostructures, self-organized fabrication of composite semiconductor quantum dots, the formation of metallic nanostructures and nanophotonic information systems with security. These topics are also reviewed by seven leading scientists, making this overview a valuable resource for engineers and scientists working in the field of nanophotonics.