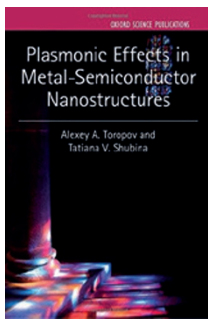


# New titles at a glance

## Plasmonic Effects in Metal-Semiconductor Nanostructures

By Alexey A. Toropov and Tatiana V. Shubina  
OXFORD UNIV. PRESS 384PP. £75

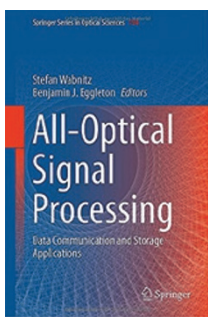


This book contains descriptions of the electrodynamic of conducting structures and the quantum physics of semiconductor nanostructures, providing guidelines and recommendations for the advanced engineering of

metal–semiconductor composite structures. These constituents together form the physical basics of metal–semiconductor plasmonics, underlying many effective practical applications. Also included is a review of recent results, such as the achievement of a strong coupling regime and the preservation of non-classical statistics for photons in plasmonic cavities combined with semiconductor nanostructures. The potential readers of the book are researchers and graduate-level students in physics, optical and electrical engineering, and materials science.

## All-Optical Signal Processing

Edited by Stefan Wabnitz and Benjamin J. Eggleton  
SPRINGER 534PP. £117



Written by leaders in the field, this book provides a comprehensive review of the state-of-the-art of optical signal processing technologies and devices.

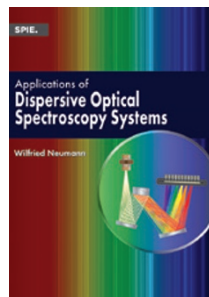
Today's optical communication infrastructure remains largely confined to

the signal transport layer and lags behind electronics as far as signal processing is concerned. The book presents breakthrough solutions for data communications and signal storage applications, as well as optical signal processing as a solution to overcome the

capacity crunch in communication networks. Topics covered include the development of innovative materials and devices, such as graphene and slow-light structures, the use of nonlinear optics for secure quantum information processing and overcoming the classical Shannon limit on channel capacity, and microwave signal processing.

## Applications of Dispersive Optical Spectroscopy Systems

By Wilfried Neumann  
SPIE PRESS 224PP. \$53

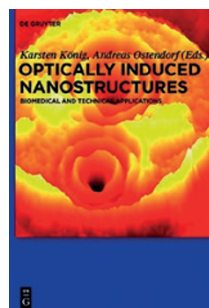


Bridging the gap between the theoretical background of applied spectroscopy systems and practical recommendations, this book addresses the requirements, recommended configurations, and the justification

and verification of systems for various applications. It encompasses topics such as the selection and combination of components to fulfil requirements, as well as methods to justify functionality. It is suitable for students, engineers and scientists looking for a concise text that provides background knowledge, perspective and technical details for system design, and for specialists it serves as an easy-to-read compendium.

## Optically Induced Nanostructures

Edited by Karsten König and Andreas Ostendorf  
DE GRUYTER 329PP. \$168



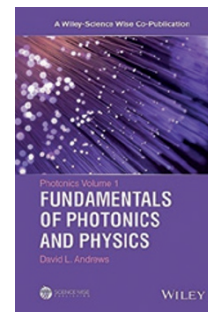
The nanostructuring of materials is a task at the heart of many aspects of mechanical engineering, as well as optics, electronics and the life sciences. This book introduces the relevant nonlinear optical processes associated with very short laser

pulses for the generation of structures far below the classical optical diffraction

limit of about 200 nm, and details state-of-the-art technical and biomedical applications, such as silicon and glass wafer processing, production of nanowires, laser transfection and cell reprogramming, optical cleaning, surface treatment of implants, nanowires, three-dimensional nanoprinting, stimulated-emission depletion lithography, friction modification and integrated optics. Focusing on non-UV (such as near-infrared) radiation, it also highlights the use of modern femtosecond laser microscopes and nanoscopes as novel nanoprocessing tools.

## Photonics Volume 1: Fundamentals of Photonics and Physics

Edited by David L. Andrews  
WILEY 472PP. £96.95



This volume is part of a four-book set that aims to comprehensively and accessibly cover the whole of modern photonics, including the basic physical principles underlying the technology and applications of photonics from statistical optics

to quantum optics. Written by specialists in the field, the topics discussed are wide ranging, including coherence and statistical optics, complex light and singular optics, electrodynamic of dielectric media, fast and slow light, holography, multiphoton processes, optical angular momentum, optical forces, trapping and manipulation. Other featured topics are polarization states, attosecond streaking spectroscopy, quantum electrodynamic, quantum information and computing, quantum optics, resonance energy transfer, surface and cavity optics and ultrafast pulse phenomena. This volume is suitable for graduate-level students, industrial and academic researchers in photonics, policymakers and consultants. The other three volumes in the series cover nanophotonic structures and materials (volume 2); photonics technology and instrumentation (volume 3); and biomedical photonics, spectroscopy and microscopy (volume 4).