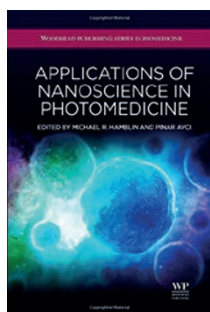


# New titles at a glance

## Applications of Nanoscience in Photomedicine

Edited by Michael R. Hamblin and Pinar Avci  
CHANDOS PUBLISHING 574PP. £120

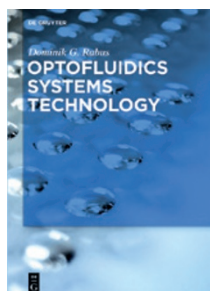


The opportunities and benefits of integrating nanoparticles into optical-based imaging and therapies for biomedical applications is the main focus of this book. Topics covered include fluorescent nanoparticles

for cancer imaging, nanoparticles for photodynamic therapy, smart nanoprobe, light-activated antimicrobial nanoparticles, chlorophyll-based multifunctional nanoparticles and quantum dots. Popular imaging schemes such as photoacoustic imaging, surface enhanced Raman scattering and wide-field diagnostic imaging are also discussed. Optogenetics, an emerging topic of growing importance, and the use of nanoscience for gene and drug delivery is also described.

## Optofluidics Systems Technology

By Dominik G. Rabus  
DE GRUYTER 340PP. €129.95

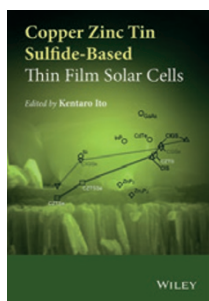


The integration of photonic devices with microfluidics technology is yielding the development of innovative sensing hardware for the medical and biochemical sectors. This text describes the underlying

technology and principles that are being applied to create a wide variety of devices for determining flow, pressure, temperature, pH, conductivity, and oxygen level, for example. The biological requirements and fabrication methods for creating such devices are also described. A section is also dedicated to control and feedback schemes, discussing a variety of open and closed feedback techniques.

## Copper Zinc Tin Sulfide-Based Thin Film Solar Cells

Edited by Kentaro Ito  
WILEY 440PP. £100

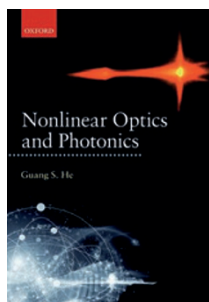


The compound semiconductor copper zinc tin sulfide (CZTS) has become a popular materials system for constructing efficient thin-film photovoltaic devices. With power conversion efficiencies approaching around 10% the

technology is now considered a serious contender for widespread deployment and commercialization. This book describes the physics, chemistry and growth of quaternary chalcogenide semiconductor crystals. It also provides information on the optical, electronic and thermal properties of the CZTS system. The device characteristics, loss mechanisms and market challenges and historical development of CZTS solar cells are also described.

## Nonlinear Optics and Photonics

By Guang S. He  
OXFORD UNIV. PRESS 656PP. £55

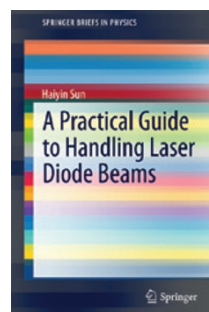


Claiming to offer a comprehensive description of the fundamental phenomena and applications of nonlinear optics, this text is divided into 18 sections. The book starts with an explanation of underlying important

mechanisms such as three- and four-wave frequency mixing, induced refractive index changes, optical phase conjugation, self-focusing and self-phase modulation. It then describes how the effects can be put to good use and experimentally realized in the form of optical solitons, fast and slow light, optical bistability and nonlinear and ultra-high resolution laser spectroscopy. A chapter is also dedicated to the emerging area of nonlinear effects in the terahertz spectral region.

## A Practical Guide to Handling Laser Diode Beams

By Haiyin Sun  
SPRINGER 136PP. £44.99

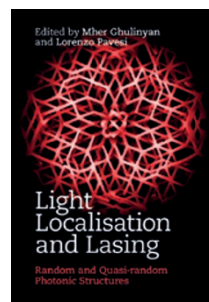


Dedicated to the topic of laser beam control and characterization, this book is a revised and expanded version of *Laser Diode Beam Basics, Manipulations and Characterizations* by the same author.

This new version includes a discussion of different types of laser diodes and their principles of operation, Zemax modelling of beam propagation, spectral characterization, and power and energy measurement. Other topics of discussion include schemes for collimation, focusing, coupling into optical fibres and beam shaping. A section dedicated to beam characterization describes various linewidth and wavelength measurement techniques as well as the measurement of spatial and spectral properties.

## Light Localisation and Lasing

Edited by Mher Ghulinyan and Lorenza Pavesi  
CAMBRIDGE UNIV. PRESS 260PP. £55



The study of light propagation, localization and lasing in random, quasi-random and aperiodic photonic systems has attracted significant interest in recent years. In particular, technological advances have brought improvements in

the fabrication of sophisticated samples and schemes for characterizing the properties of such systems. This text covers light transport in photonic crystals, coupled microresonator chains, quasi-crystals as well as a variety of material platforms including semiconductors, organics and glass materials. Light transport in one-dimensional, two-dimensional and three-dimensional systems is described. The book is organized into eight chapters each covering a different topic and written by well-known experts in the area.