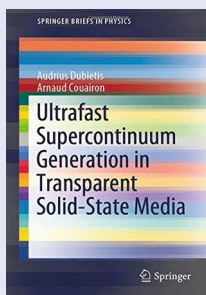


Nonlinear-Emission Photonic Glass Fiber and Waveguide Devices

By Chun Jiang and Pei Song

CAMBRIDGE UNIVERSITY PRESS: 2019. 240PP. £110.00.

This book consists of eight chapters describing the design of compact and broadband fibre and waveguide devices using active-ion-doped photonic glasses. It talks about the use of the complementarity of emission spectra of different active ions in broadband fibre amplifiers and optical fibre communication, and the improvement of the match between the solar spectrum and the responsiveness of silicon cells via quantum cutting of active ions. Topics discussed include mathematical fundamentals of nonlinear-emission photonic fibres and waveguides, fundamental spectral theory of photonic glasses, spectral properties of ytterbium-doped glasses, compact fibre amplifiers, photonic glass fibre lasers, broadband fibre amplifiers and sources, and photonic glass waveguides for spectral conversion and white-light generation.

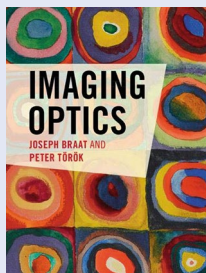


Ultrafast Supercontinuum Generation in Transparent Solid-State Media

By Audrius Dubietis and Arnaud Couairon

SPRINGER: 2019. 125PP. £44.99.

This title reviews the fundamental physical mechanism and the state of the art of femtosecond supercontinuum generation in various transparent solid-state media, ranging from wide-bandgap dielectrics to semiconductor materials, from the ultraviolet to the mid-infrared regime. Particular attention is given to the most recent experimental developments on multi-octave supercontinuum generation with pumping in the mid-infrared spectral range, spectral control, power and energy scaling of broadband radiation, and simple, flexible and robust pulse compression techniques.

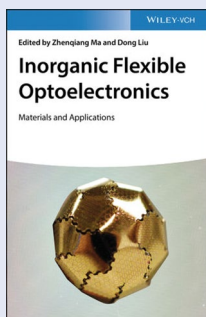


Imaging Optics

By Joseph Braat and Peter Török

CAMBRIDGE UNIVERSITY PRESS: 2019. 984PP. £79.99.

Composed of 11 chapters, this volume provides a comprehensive overview of the theoretical and applied aspects of optical imaging. It introduces the fundamentals of optical imaging based on the concepts of both ray and wave optics. The chapters are divided into three parts: electromagnetic theory in the optical domain, and geometrical theory and diffraction theory of optical imaging. Electromagnetic diffraction problems and their solutions using coupled-wave analysis and finite-difference time-domain methods are discussed. A rigorous treatment of high-resolution vector imaging and a complete analysis of aberrations in high-aperture imaging are also provided.



Inorganic Flexible Optoelectronics

Edited by Zhenqiang Ma and Dong Liu

WILEY: 2019. 280PP. £100.00.

This text provides an overview of the state of the art in inorganic flexible optoelectronics, covering materials to applications. Made up of 31 chapters, it starts by discussing flexible inorganic light-emitting diodes enabled by new materials and designs, and flexible light-emitting diodes based on inorganic semiconductor nanostructures from thin films to nanowires. It then details flexible photodetectors with nanomembranes and nanowires, and two-dimensional-material-based photodetectors on flexible substrates. The second half of the book is dedicated to flexible solar cells made of group IV materials, group III-V materials and novel materials such as chalcogenides, perovskites and colloidal quantum dots.

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