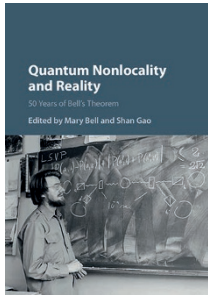


# New titles at a glance

## Quantum Nonlocality and Reality

Edited by Mary Bell and Shan Gao  
CAMBRIDGE UNIV. PRESS 456PP. £99.99

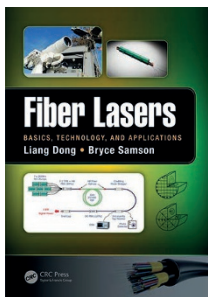


Structured as a collection of 26 original essays written by physicists and philosophers of physics, this book gathers recent thoughts and opinions on the influence of Bell's theorem on quantum physics.

In this way, the significance and legacy of Bell's main work are presented from different angles. Following a part on the character and scientific background of John Bell, the first chapters cover the hypotheses of Bell's proof, the experimental tests of Bell's inequalities and the crucial hidden-variable assumption. Later essays discuss topics that are still an active subject of debate, such as nonlocality and local causality, as well as the many-worlds interpretation and weak values. The fourth and final part of the book presents some nonlocal realistic theories, including a chapter by Roger Penrose on twistor theory.

## Fiber Lasers

By Liang Dong and Bryce Samson  
CRC PRESS 324PP. £127.00



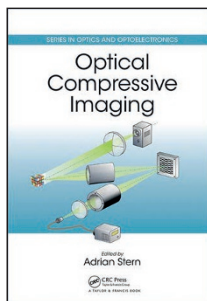
Over the past decades, fibre laser technology has gained ground in areas as diverse as materials processing and the design of medical equipment. Aimed at graduate students and more experienced scientists and engineers alike,

the book opens with the physics of optical fibres and a description of fabrication and characterization techniques. Further, the authors consider in detail several notable fibre systems: erbium-doped fibre amplifiers, continuous-wave fibre lasers, pulsed systems in the picosecond and nanosecond regime as well as active and passive mode-locked fibre lasers. Other chapters focus on sources operating at specific wavelengths — the

emission of light at 1.55  $\mu\text{m}$  and in the mid-infrared region being crucial in several areas. Supercontinuum generation is also discussed. A presentation of industrial, medical, ranging and sensing applications of fibre lasers concludes the volume.

## Optical Compressive Imaging

Edited by Adrian Stern  
CRC PRESS 304PP. £127.00

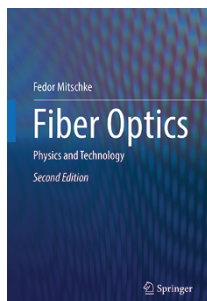


This book provides an overview of the compressed sensing technique in the context of optical imaging. The first chapter lays out the theoretical foundations of compressed sensing and identifies challenges that arise when applying

this method to imaging systems. Next, the text presents relevant optical designs for compressive imaging, with a focus on terahertz and infrared techniques as well as on motion compressive sensing. Later chapters discuss compressed holography, light-field sensing, spectral and hyperspectral imaging. Of interest to many researchers will be the part dedicated to the application of compressed sensing to super-resolution imaging, which includes specific references to stochastic optical reconstruction microscopy (STORM) and lens-free microscopy. The book concludes with a chapter on phase sensing, phase retrieval of sparse images and tomography in phase space.

## Fiber Optics

By Fedor Mitschke  
SPRINGER 349PP. £63.99

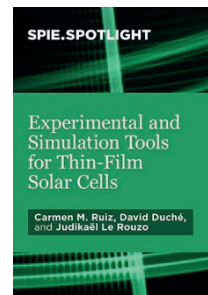


Written by a physicist involved in early work on soliton formation in optical fibres, this title offers an in-depth presentation of the light-guiding structures that form the basis of most modern

communication architectures. The book begins with an overview of the transmission of information through the centuries, followed by the mathematical treatment of light propagation in an optical fibre in terms of ray and wave optics. Subsequent chapters discuss chromatic dispersion and loss mechanisms. The author then illustrates the basics of fibre manufacturing, and introduces components most often associated with fibre technology such as connectors, isolators and elements for controlling the polarization of light. The two final chapters cover nonlinear phenomena in optical fibres and the applications of these light-guiding structures to telecommunication systems and sensors. Technical appendices on selected topics (such as decibel units and Bessel functions) complement this rich volume.

## Experimental and Simulation Tools for Thin-Film Solar Cells

By Carmen M. Ruiz, David Duché and Judikaël Le Rouzo  
SPIE 49PP. US\$31.00



This digital book, part of the SPIE Spotlight series, presents a concise account of the tools used to characterize and design thin-film solar cells. Indeed, thin-film layers behave differently from bulk media, and

present-day photovoltaic architectures have reached a level of complexity that requires comprehensive knowledge of the electrical, optical and structural properties of the considered materials. In this volume, the authors study cadmium telluride (CdTe), copper indium gallium sulfide (CIGS), copper zinc tin sulfide (CZTS), perovskite and organic solar cells. The properties of these materials are studied with techniques such as ellipsometry, photoluminescence and photoreflectance. As discussed in the final chapter, this experimental data can be fed into the numerical model used to design thin-film solar cells and identify ways to improve their performance.