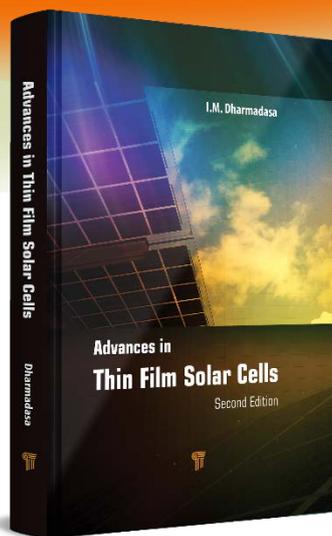


New & Notable Textbooks

Jan-Feb 2019



Advances in Thin-Film Solar Cells

Second Edition

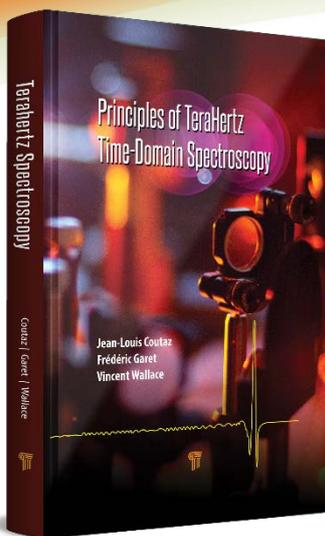
I. M. Dharmadasa, *Sheffield Hallam University, UK*

This book concentrates on the latest developments and attempts to improve our understanding of solid-state device physics. The material presented is mainly experimental and based on CdTe thin-film solar cells. The author extends these new findings to CIGS thin-film solar cells and presents a new device design based on graded bandgap multi-layer solar cells. This design has been experimentally tested using the well-researched GaAs/AlGaAs system, and initial devices have shown impressive device parameters. These devices are capable of absorbing all radiation (UV, visible and infrared) within the solar spectrum and combine "impact ionisation" and "impurity photovoltaic" effects.

Audience: Students in chemistry, materials science, physics, mathematics and electronic engineering.

Sales Opportunity: Exposes the significant effect of defects in semiconductors and interfaces that affect the performance of these devices. Presents experimental results in a simple way so that the materials become useful even for undergraduate students.

Aug 2018, 286 Pages, GBP116
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Principles of Terahertz Time-Domain Spectroscopy

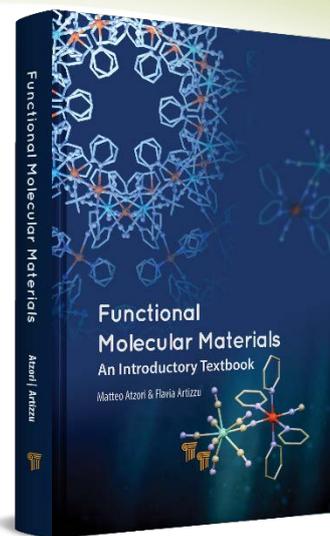
Jean-Louis Coutaz, Frédéric Garet, Vincent P. Wallace, *Université Savoie Mont Blanc, Chambéry, France*

Terahertz time-domain spectroscopy (THz-TDS) is a unique technique for characterizing the response of materials and devices in the far-infrared region of the electromagnetic spectrum. Based on the measurement of transmitted or reflected ultra-short electromagnetic pulses and on a Fourier-transform of the recorded waveforms, THz-TDS permits fast and precise determination of the permittivity or permeability of materials over a wide bandwidth. This book is devoted to the determination of this spectral response of samples from the recorded waveforms.

Audience: Students in chemistry and physics.

Sales Opportunity: The book presents the basics of THz-TDS, including the latest research in the THz domain, an overview of the main classical far infrared techniques, and a description of a variety of THz-TDS setups. It provides a comprehensive overview of the extraction procedures used to calculate to the permittivity (i.e. the complex refractive index) or permeability spectral curves from recorded waveforms.

Dec 2018, 622 Pages, GBP139
279 B/W Illustrations
ISBN 9789814774567 (Cloth)
ISBN 9780203709696 (eBook)



Functional Molecular Materials An Introductory Textbook

Matteo Atzori, Flavia Artizzu, *University of Florence, Italy*

The field of molecular materials represents an exciting playground for the design, tailoring, and combination of chemical building blocks as carriers of physical properties and aims at the understanding and development of novel functional molecular devices.

This book provides a general overview of molecular materials, discussing their key features in a simple and organic way by focusing more on basic concepts rather than on specialized descriptions, in order to supply the non-expert reader with the immediate fundamental tools and hints to understand and develop research in this field.

Audience: Students in chemistry, physics and material science.

Sales Opportunity: The properties of different classes of materials are explained through the discussion of archetypical examples. The original purpose behind material design is highlighted. The physical properties of materials are explained on a fundamental basis with simple terminology. Illustrated throughout with more than 200 high-quality figures.

Apr 2018, 400 Pages, GBP116
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