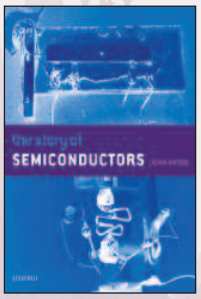
The Story of Semiconductors

John W. Orton, University of Nottingham

Available in... www.oxfordscholarship.com



'Orton has provided a valuable contribution for those of us studying semiconductor science, technology and industry by packing within a single volume most of what we need to know about its technical content. And he has accomplished this worthwhile task with considerable aplomb, without bogging down less-adept readers in needless jargon.'

Physics World

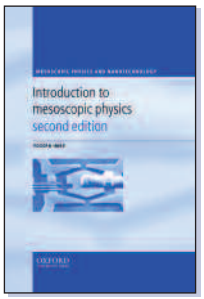
This book is unique in describing the historical development of semiconductor devices and their applications to human needs. It describes these developments in human terms and can be enjoyed by students of physics, electrical engineering, and materials science as well as by a wide range of scientists from other disciplines.

2008 | 528 pages | 183 line and 15 halftones

978-0-19-955910-7, PAPERBACK £25.00/$45.00
978-0-19-853083-1, HARDBACK £49.95/$85.00

Introduction to Mesoscopic Physics

SECOND EDITION



Yoseph Imry, Weizmann Institute of Science, Rehovot, Israel

'This interesting and relatively brief book brings the reader into contact with some exciting developments in a very active area of condensed matter physics. It provides a ready reference to the main themes and results and belongs on the desks of all workers in this field.'

Physics Today

Mesoscopic Physics and Nanotechnology No. 2

2008 | 256 pages | 34 line and 2 halftone illustrations

978-0-19-955269-6, PAPERBACK £31.50/$60.00
978-0-19-850738-3, HARDBACK £62.50/$119.99

NEW IN PAPERBACK

Quantum Transport in Mesoscopic Systems

Complexity and Statistical Fluctuations. A Maximum Entropy Viewpoint

Pier A. Mello, UNAM, Mexico, and **Narendra Kumar**, Raman Research Institute, India

The authors here present a statistical theory of wave scattering by complex systems, with emphasis on mesoscopic fluctuations. The novel approach is a Maximum-Entropy viewpoint, that incorporates the universality of the behaviour in a natural way. The pedagogical presentation of Quantum Scattering Theory, Linear Response Theory and Information Theory make these chapters suitable for graduate courses on the subject. The book contains many worked-out exercises: this should help graduate students, teachers and research scholars interested in the subject of quantum transport through disordered and chaotic systems.

July 2010 | 416 pages | 30 b/w line illustrations

978-0-19-852583-7, PAPERBACK £37.50/$67.50
978-0-19-852582-0, HARDBACK £90.00/$190.00

HAVE YOU SEEN?

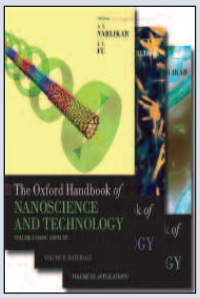
Gregg: *The Art of Spintronics* on page **4** in Oxford Master Series

Kavokin: *Microcavities* on page **12** in Atomic, Laser, Optical

Singleton: *Band Theory and Electronic Properties of Solids* on page **4** in Oxford Master Series

Oxford Handbook of Nanoscience and Technology

Three-Volume Set



Edited by **A.V. Narlikar**, Indian National Science Academy, and **Y.Y. Fu**, Peking University, P.R. China

This is an agenda-setting and high-profile book that presents an authoritative and cutting-edge analysis of nanoscience and technology. *The Oxford Handbook of Nanoscience and Technology* provides a comprehensive and accessible overview of the major achievements in different aspects of this field. It comprises 3 volumes, structured thematically, with 25 chapters each. Volume I presents fundamental issues of basic physics, chemistry, biochemistry, and tribology of nanomaterials. Volume II focuses on the progress made with host of nanomaterials including DNA and protein based nanostructures. Volume III highlights engineering and related developments, with a focus on frontal application areas. All chapters are written by noted international experts in the field.

Oxford Handbooks in Physics

February 2010 | 960 pages | 1350 b/w illustrations

978-0-19-957443-8 £299.00/$550.00

Oxford Handbook of Nanoscience and Technology

Volume 1: Basic Aspects

Edited by **A. V. Narlikar**, Indian National Science Academy, and **Y.Y. Fu**, Peking University, P.R. China

Oxford Handbooks in Physics

February 2010 | 920 pages | 450 b&w illustrations

978-0-19-953304-6, HARDBACK £125.00/$235.00

Oxford Handbook of Nanoscience and Technology

Volume 2: Materials: Structures, Properties and Characterization Techniques

Edited by **A.V. Narlikar**, Indian National Science Academy, and **Y.Y. Fu**, Peking University, P.R. China

Oxford Handbooks in Physics

February 2010 | 960 pages | 450 b/w illustrations

978-0-19-953305-3, HARDBACK £125.00/$235.00

Oxford Handbook of Nanoscience and Technology

Volume 3: Applications

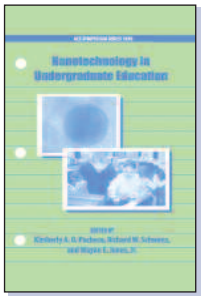
Edited by **A.V. Narlikar**, Indian National Science Academy, and **Y.Y. Fu**, Peking University, P.R. China

Oxford Handbooks in Physics

February 2010 | 936 pages | 450 b/w illustrations

978-0-19-953306-0, HARDBACK £125.00/$235.00

Nanotechnology in Undergraduate Education



Edited by **Kimberly Pacheco**, University of Northern Colorado, **Richard Schwenz**, University of Northern Colorado, and **Wayne Jones**, Binghamton University (SUNY)

Funding of development and implementation of nanotechnology experiences into the undergraduate curriculum has been increasing in recent years due to the expectation of the enormous impact nanotechnology research will have on the future workforce and the need for understanding of nanotechnology concepts by the general population. This symposium series book describes various course and curricula modifications being incorporated by institutions as well as specific laboratory experiences appropriate for undergraduates. Also included is an introduction to techniques necessary for characterization of materials at the nanoscale.

An American Chemical Society Publication

April 2010 | 352 pages | 36 halftones & 14 line drawings
OUP USA

978-0-84-126968-2, HARDBACK £95.00/$150.00

Micro/Nano Technology Systems for Biomedical Applications

Available in... www.oxfordscholarship.com

Microfluidics, Optics, and Surface Chemistry

Edited by **Chih-Ming Ho**, University of California, Los Angeles

Providing a clear guide that moves from molecules through to devices, this book shows how state-of-the-art micro- and nanotechnologies are already having an impact on human health, and presents the areas of research that will lead to the next generation of micro/nano-based systems for biomedical applications.

March 2010 | 472 pages | Two hundred illustrations

978-0-19-921969-8, HARDBACK £65.00/$125.00

Nanoscience and Nanotechnology for Chemical and Biological Defense

Edited by **R. Nagarajan**, Development & Engineering Center, **Walter Zukas**, Development & Engineering Center, **T. Alan Hatton**, Massachusetts Institute of Technology, and **Stephen Lee**, U.S. Army Research Office

The papers incorporated in this book cover a wide range of methods to detect chemical and biological threats, and also methods to protect against them.

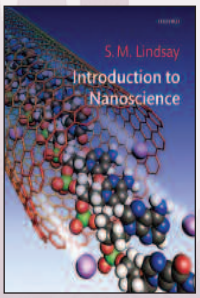
ACS SYMPOSIUM No. 1016

March 2010 | 384 pages | 47 line & 130 halftone illustrations
OUP USA

978-0-84-126981-1, HARDBACK £105.00/$175.00

Introduction to Nanoscience

Stuart Lindsay, Arizona State University



'The book covers a lot of ground and combines a thoroughness of treatment with a lightness of touch. It is attractive for both undergraduate students seeking clear explanations and graduate students wanting depth.'

Stephen Blundell, Oxford University

This is the first text in nanoscience that integrates the physics, chemistry and biology of this new discipline. Each topic is treated assuming no background, but a conceptual emphasis and numerous examples and problems lead the reader to make contact with current research literature.

2009 | 472 pages | 280 black and white line drawings and halftones

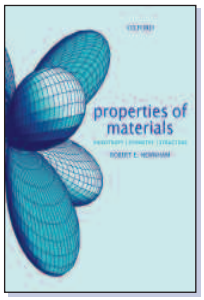
978-0-19-954421-9, PAPERBACK £35.00/$59.95
978-0-19-954420-2, HARDBACK £69.95/$99.00

Properties of Materials

Anisotropy, Symmetry, Structure

suitable as a student text

Robert E. Newnham, Pennsylvania State University, USA



'This book is a clear academic authority on the properties of a breadth of crystalline materials for many applications. It is particularly suitable for science and engineering students in the final years of undergraduate studies and a useful reference for research students in electrical, magnetic and optical materials science and engineering.'

Times Higher Education Supplement

2004 | 392 pages | numerous line figures

978-0-19-852076-4, PAPERBACK £45.00/$85.00
978-0-19-852075-7, HARDBACK £95.00/$169.40

Viscoelastic Behavior of Rubbery Materials

C. Michael Roland, Naval Research Laboratory, Washington DC

The gigantic size of polymer molecules makes them 'viscoelastic': their behavior changes depending on how fast and for how long the material is used. This book describes the latest discoveries in the field from a fundamental molecular perspective, in order to guide the development of better and new applications for soft materials.

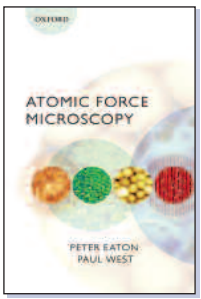
April 2011 | 320 pages | 266 b&w line and halftone illustrations

978-0-19-957157-4, HARDBACK £55.00/$99.00

Atomic Force Microscopy

Available in... www.oxfordscholarship.com

Peter Eaton, University of Porto, Portugal, and **Paul West**, Pacific NanoTechnology, California



Atomic force microscopy is an amazing technique that allies a versatile methodology (that allows measurement of samples in liquid, vacuum or air) to imaging with unprecedented resolution. But it goes one step further than conventional microscopic techniques; it allows us to make measurements of magnetic, electrical or mechanical properties of the widest possible range of samples, with nanometre resolution. This book will demystify AFM for the reader, making it easy to understand, and to use.

March 2010 | 256 pages | 150 b/w line and halftone illustrations | 9 colour figures

978-0-19-957045-4, HARDBACK £55.00/$99.00

NEW IN PAPERBACK

High Energy Electron Diffraction and Microscopy

L.M. Peng, Peking University, Beijing, **S.L. Dudarev**, Culham Science Centre, Oxfordshire, and **M.J. Whelan**, University of Oxford

'This is a superb book. It is certainly the most thorough, unified and comprehensive treatment of high-energy electron diffraction (HEED) theory to appear for many years.'

Acta Crystallographica

This is an in-depth treatment of the theoretical background relevant to an understanding of materials that can be obtained by using high-energy electron diffraction and microscopy. The book provides a comprehensive introduction to high energy electron diffraction and elastic and inelastic scattering of high energy electrons, with particular emphasis on applications to modern electron microscopy.

Monographs on the Physics and Chemistry of Materials No. 61

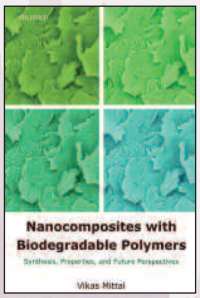
April 2011 | 560 pages | numerous line drawings and halftones

978-0-19-960224-7, PAPERBACK £49.95/$89.95
978-0-19-850074-2, HARDBACK £97.50/$175.00

Nanocomposites with Biodegradable Polymers

Synthesis, Properties, and Future Perspectives

Edited by **Vikas Mittal**, BASF Polymer Research, Germany



Polymers are used in practically every facet of daily life. Most polymers come from fossil fuels and are not biodegradable, causing long-term environmental hazards. Biodegradable polymers provide an alternative, environmentally friendly class of materials. Composites of such polymers have high potential within a wide spectrum of applications. In setting out the next generation of advances in anoncomposite technology, this book opens the way for further developments in the field.

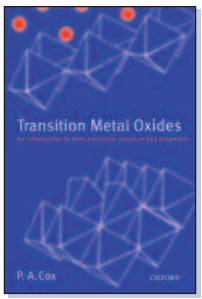
Monographs on the Physics and Chemistry of Materials No. 68

April 2011 | 400 pages | 217 b/w line and halftone illustrations

978-0-19-958192-4, HARDBACK £65.00/$130.00

Transition Metal Oxides

An Introduction to Their Electronic Structure and Properties



P.A. Cox, University of Oxford

'An eminently readable and lucid account. The book does serve as a guidebook for phenomena and concepts in the chemistry and physics of oxides and does provide a good, readable, elementary introduction to an area that has risen to prominence in the last two decades.'

Journal of Solid State Chemistry

Transition metal oxides form a series of compounds with a uniquely wide range of electronic properties. The main aim of this book is to describe the varied electronic behaviour shown by transition metal oxides, and to discuss the different types of theoretical models that have been proposed to interpret this behaviour.

August 2010 | 304 pages | 100 b&w line illustrations

978-0-19-958894-7, PAPERBACK £27.50/$49.95

Thermodynamics and Kinetics in Materials Science

suitable as a student text

A Short Course

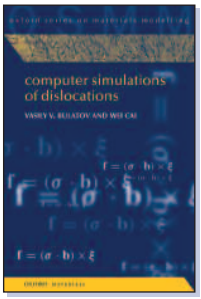
Boris S. Bokstein, **Mikhail I. Mendelev**, and **David J. Srolovitz**, Princeton Institute for the Science and Technology of Materials, USA

A concise and thorough introduction to the concepts and applications of thermodynamics and kinetics, suitable for a 1-2 semester course for upper-level undergraduates or first year graduate students in a materials-science-oriented discipline. It can also be used as a self-study guide, containing computer-based self-tests and 'laboratories'.

2005 | 344 pages | numerous mathematical examples and line drawings

978-0-19-852804-3, PAPERBACK £43.50/$85.00

Computer Simulations of Dislocations



Vasily Bulatov, Lawrence Livermore National Laboratory, and **Wei Cai**

The book presents a variety of methods for computer simulations of crystal defects in the form of 'numerical recipes', complete with computer codes and analysis tools. By working through numerous case studies and problems, this book provides a useful starter kit for further method development in the computational materials sciences.

OSMM No. 3

2006 | 300 pages | 88 line drawings | 4 halftones

978-0-19-852614-8, HARDBACK £57.50/$99.00

NEW EDITION

Acoustic Microscopy

SECOND EDITION

Available in www.oxfordscholarship.com

Andrew Briggs, University of Oxford, and **Oleg Kolosov**, University of Lancaster

For many years *Acoustic Microscopy* by Andrew Briggs has been the definitive book on the subject. A key development since it was first published has been the development of ultrasonic force microscopy, in which the elastic vibrations are detected with nanometre resolution by the tip of an atomic force microscope. The second edition has a major new chapter on this technique and its applications.

Monographs on the Physics and Chemistry of Materials No. 67

2009 | 384 pages | 111 line drawings | 116 halftones 12 colour images

978-0-19-923273-4, HARDBACK £57.50/$110.00

Layered Superconductors

Volume I

Richard A. Klemm, University of Central Florida, USA

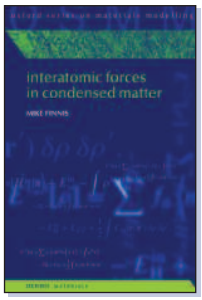
A comparison and contrast of the different chemical structures, normal state properties, and simplest superconducting properties of all known classes of layered superconductors, this book introduces the three phenomenological models used to describe such systems, and will guide young researchers hoping to produce a room-temperature superconductor.

July 2011 | 432 pages | 300 b&w line and halftone illustrations

978-0-19-959331-6, HARDBACK £65.00/$115.00

NEW IN PAPERBACK

Interatomic Forces in Condensed Matter



Mike Finnis, Imperial College, London

Models of inter-atomic forces are derived from a common physical basis, namely the density functional theory. The interested reader will be able to follow the detailed derivation of pairwise potentials in simple metals, tight-binding models from the simplest to the most sophisticated (self-consistent) kind, and various ionic models. The book is self-contained, requiring no more background than provided by an undergraduate quantum mechanics course. It aims to furnish the reader with a critical appreciation of the broad range of models in current use, and to provide the tools for understanding other variants that are described in the literature. Some of the material is new, and some pointers are given to possible future avenues of model development.

Oxford Series on Materials Modelling No. 1

May 2010 | 304 pages | 40 line drawings

978-0-19-958812-1, PAPERBACK £27.50/$50.00
978-0-19-850977-6, HARDBACK £65.00/$115.00

Interfaces in Crystalline Materials

A.P. Sutton, Imperial College London, and **R.W. Balluffi**, Massachusetts Institute of Technology

The study of interfaces within and between materials is a central field which is relevant to almost all aspects of materials science. This book is intended to serve as a graduate text consisting of four inter-related parts spanning the structure, thermodynamics, kinetics, and properties of interfaces in crystalline materials.

Oxford Classic Texts in the Physical Sciences

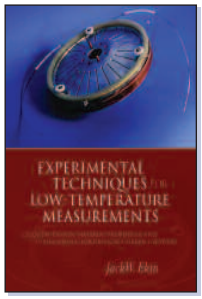
2006 | 852 pages | numerous line drawings | mathematical examples and halftones

978-0-19-921106-7, PAPERBACK £55.00/$99.00

Experimental Techniques for Low-Temperature Measurements

Available in... www.oxfordscholarship.com

Cryostat Design, Material Properties and Superconductor Critical-Current Testing



Jack Ekin, National Institute of Standards and Technology, Boulder, Colorado

'Overall, I highly recommend Ekin's book. It is informative and well written, for beginners who are starting research at low temperatures and for veterans who will benefit from the author's experience.'

George O. Zimmerman, Physics Today

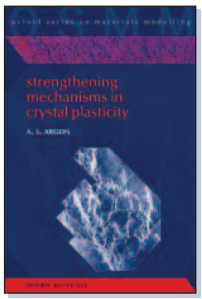
2006 | 704 pages | 218 line drawings

978-0-19-857054-7, HARDBACK £75.00/$150.00

Strengthening Mechanisms in Crystal Plasticity

Available in... www.oxfordscholarship.com

Ali Argon, MIT



'Professor Argon, with his wealth of knowledge on strengthening mechanisms in solids, has presented a lucid, up-to-date review of the subject.'

Materials World

OSMM No. 4

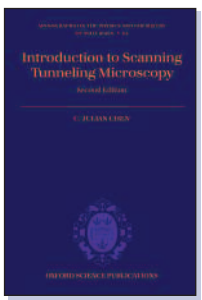
2007 | 424 pages | Halftone illustrations and line figures throughout

978-0-19-851600-2, HARDBACK £52.50/$85.00

Introduction to Scanning Tunneling Microscopy

Available in... www.oxfordscholarship.com

SECOND EDITION



C. Julian Chen, Columbia University, New York

The scanning tunneling and the atomic force microscope, both capable of imaging individual atoms, were crowned with the Physics Nobel Prize in 1986, and are the cornerstones of nanotechnology today. The first edition has nurtured numerous beginners and experts since 1993. The second edition is a thoroughly updated version of this 'bible' in the field.

Monographs on the Physics and Chemistry of Materials No. 64

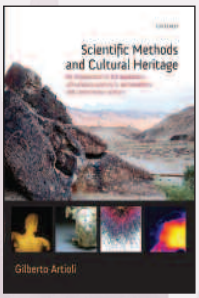
2007 | 488 pages | 255 line drawings and 35 halftones

978-0-19-921150-0, HARDBACK £72.50/$150.00

Scientific Methods and Cultural Heritage

Available in... www.oxfordscholarship.com

An introduction to the application of materials science to archaeometry and conservation science



Gilberto Artioli, CIRCe Center and University of Padova, Italy

Intended as an entry-level introduction to the methods and rationales of scientific investigation of cultural heritage materials, with emphasis placed on the analytical strategies, modes of operation, and resulting information rather than on technicalities. The extensive and updated reference list should be a useful starting point for further reading. Students and researchers from humanities approaching scientific investigation should find it useful, as well as scientists applying familiar techniques and methods to unfamiliar problems related to cultural heritage.

July 2010 | 552 pages | 200 b/w line and halftone figures | 8pp colour plates

978-0-19-954826-2, HARDBACK £65.00/$117.00

Muon Spin Rotation, Relaxation, and Resonance

Applications to Condensed Matter

Alain Yaouanc and **Pierre Dalmas de Réotier**, both at Commissariat à l'Energie Atomique, Grenoble, France

This book is primarily intended for postgraduate students and researchers in the fields of condensed matter science, chemical physics and material science, who plan to use the muon spin rotation, relaxation and resonance (μSR) techniques. It combines for the first time a detailed discussion of the physical information contained in the measured polarisation functions with real-life examples taken from the literature.

International Series of Monographs on Physics No. 147

December 2010 | 504 pages | 132 b/w line illustrations

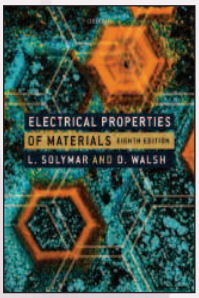
978-0-19-959647-8, HARDBACK £75.00/$135.00

NEW EDITION

Electrical Properties of Materials

suitable as a student text

EIGHTH EDITION



Laszlo Solymar, Imperial College, London, and **Donald Walsh**, University of Oxford

'An informal and highly accessible writing style, a simple treatment of mathematics, and a clear guide to applications have made this book a classic text in electrical and electronic engineering. Students will find it both readable and comprehensive.'

European Journal of Engineering Education

An informal and highly accessible writing style, simple treatment of mathematics, and a clear guide to applications, have made this book a classic text in electrical and electronic engineering. Fundamentals of electrical properties of materials are illustrated and put into context with contemporary applications in engineering. It includes problems and worked solutions to support student learning. Mathematical content is kept to a minimum, allowing the reader to focus on the subject.

Solutions manual available for lecturers. Please visit www.oup.com/uk for more information.

2009 | 464 pages | 407 line drawings and halftones

978-0-19-956591-7, PAPERBACK £27.50/$55.00
978-0-19-956592-4, HARDBACK £55.00/$100.00

Advanced Ferroelectricity

Robert Blinc, Jozef Stefan Institute, Lyubljana, Slovenia

Recent exciting advances in the field of ferroelectricity have implications both for basic physics and for technological applications such as memory devices, spintronic applications and electro-optic devices, as well as in acoustics, robotics, telecommunications and medicine. This book provides a full account of recent developments in the field and is primarily intended for material scientists working in research or industry. It is also intended for graduate and doctoral students and can be used as a textbook in graduate courses. Finally, it should be useful for anybody interested in following the developments in modern solid state physics.

International Series of Monographs on Physics No. 151

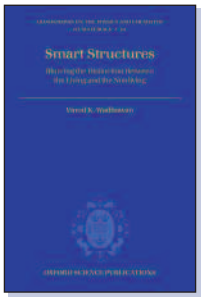
June 2011 | 272 pages | 163 b/w line and halftone illustrations | 4pp plate section

978-0-19-957094-2, HARDBACK £55.00/$99.00

Smart Structures

Blurring the Distinction Between the Living and the Nonliving

Available in... www.oxfordscholarship.com



Vinod K. Wadhawan, Bhabha Atomic Research Centre, Mumbai

Smartness is often associated with living beings, as they can adapt themselves to changing situations. Artificial smart structures are designed to mimic biological structures to a small or large extent. This book gives a comprehensive account of how this can be done.

Monographs on the Physics and Chemistry of Materials No. 65

2007 | 368 pages | 19 black and white line drawings and 1 halftone

978-0-19-922917-8, HARDBACK £65.00/$110.00

Tribology on the Small Scale

A Bottom Up Approach to Friction, Lubrication, and Wear

Available in... www.oxfordscholarship.com

C. Mathew Mate, Hitachi San Jose Research Center, California

'This book covers topics not typically found in Tribology texts emphasising how macroscopic tribological phenomena originate at the atomic and molecular level.'

International Journal of Surface Science and Engineering

Mesoscopic Physics and Nanotechnology No. 6

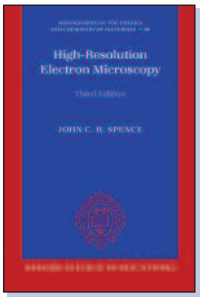
2007 | 352 pages | 164 b+w line drawings and 7 b&w halftones

978-0-19-852678-0, HARDBACK £59.95/$110.00

High-Resolution Electron Microscopy

THIRD EDITION

Available in... www.oxfordscholarship.com



John C. H. Spence, Arizona State University

This book describes how to see atoms using electron microscopes. This edition includes sections on applications and new uses of atomic-resolution transmission electron microscopy.

Monographs on the Physics and Chemistry of Materials No. 60

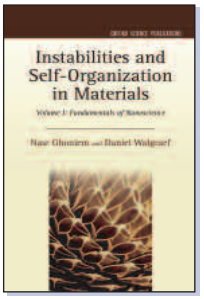
2008 | 424 pages | 72 line drawings and 80 halftones

978-0-19-955275-7, PAPERBACK £41.50/$80.00
978-0-19-850915-8, HARDBACK £105.00/$189.99

Instabilities and Self-Organization in Materials

Volume I: Fundamentals of Nanoscience
Volume II: Applications in Materials Design and Nanotechnology

Available in... www.oxfordscholarship.com



Nasr Ghoniem, University of California at Los Angeles, and **Daniel Walgraef**, Belgian National Fund for Scientific Research

Instabilities and self-organization in materials are at the core of technological applications such as crystal growth. In nano-technology, manufacturing of electronic and electromagnetic devices rely on the natural tendency of materials to undergo 'self-organization'. This book covers the fundamentals in volume I and applications in volume II.

Monographs on the Physics and Chemistry of Materials No. 63

2008 | 1,192 pages | 484 figures including 328 b/w line drawings and 156 b/w halftones

978-0-19-929868-6, HARDBACK £130.00/$225.00

NEW EDITION

Principles of Electron Tunneling Spectroscopy

SECOND EDITION

E. L. Wolf, Polytechnic Institute of New York University, USA

Electron tunnelling spectroscopy as a research tool has strongly advanced understanding of superconductivity. This book explains the physics and instrumentation behind the advances illustrated in beautiful images of atoms, rings of atoms and exotic states in high temperature superconductors, and summarizes the state of knowledge that has resulted.

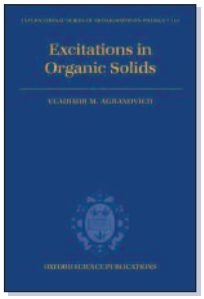
June 2011 | 680 pages | 236 b/w line and halftone illustrations | 4pp colour plate section

978-0-19-958949-4, HARDBACK £75.00/$145.00

Excitations in Organic Solids

Available in... www.oxfordscholarship.com

Vladimir Agranovich, University of Texas at Dallas



Translated by **Gerard Czajkowski**

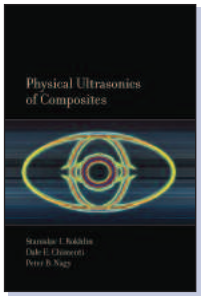
The book provides a detailed and uniform treatment of the science and technology of light absorbing organic materials (nano-scale optical devices, LEDs, solar cells etc), which are increasingly investigated for use in mass market products.

International Series of Monographs on Physics No. 142

2009 | 512 pages | 79 line drawings | 5 halftones

978-0-19-923441-7, HARDBACK £69.95/$130.00

Physical Ultrasonics of Composites



Dale Chimenti, Iowa State University, **Stanislav Rokhlin**, Ohio State University, and **Peter Nagy**, University of Cincinnati

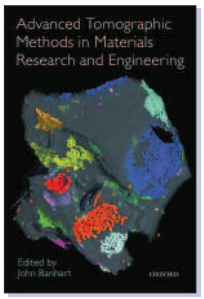
The objective of this book is to treat the behaviour of ultrasonic waves as they interact with layered, anisotropic materials incorporating those structural aspects unique to composite laminates addressing both experimental and modelling methodologies. Anisotropic material interfaces, guided waves, waves in layered media and laminated plates are treated. The influence of finite-aperture transducers on electronic signals and the field of air-coupled ultrasonics end the work.

March 2011 | 432 pages | 225 line drawings | 75 halftones
OUP USA

978-0-19-507960-9, HARDBACK £60.00/$99.00

Advanced Tomographic Methods in Materials Research and Engineering

Available in... www.oxfordscholarship.com



Edited by **John Banhart**, Hahn-Meitner-Institute, Berlin

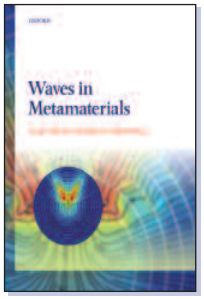
Tomography provides three-dimensional images of materials or engineering components and an unprecedented insight into their internal structure. This book, written for applied physicists, materials scientists and engineers, discusses recent developments in the field, such as the extension of tomographic methods to materials research and engineering.

Monographs on the Physics and Chemistry of Materials No. 66

2008 | 488 pages | 233 halftones and line drawings
4 page colour plate section

978-0-19-921324-5, HARDBACK £87.50/$150.00

Waves in Metamaterials



Laszlo Solymar, Imperial College, London, and **Ekaterina Shamonina**, University of Erlangen, Germany

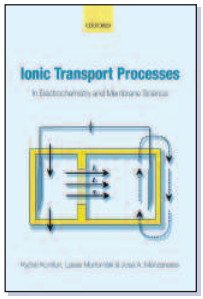
Metamaterials is a subject born in the 21st century. It is concerned with artificial materials which can have electrical and magnetic properties difficult or impossible to find in nature. The mathematics is at a level within the power of a final year undergraduate: the aim is to explain the physics in simple terms and enumerate the major advances.

2009 | 408 pages | 16pp colour plates | 191 b/w line drawings | 89 b/w halftones

978-0-19-921533-1, HARDBACK £49.95/$95.00

Ionic Transport Processes

in Electrochemistry and Membrane Science



Kyösti Kontturi, Helsinki University of Technology, **Lasse Murtomäki**, Helsinki University of Technology, and **José A. Manzanares**, University of Valencia

This book discusses transport processes of ionic species at an advanced level. It is meant for postgraduate students and researchers in electrochemistry and membrane science and technology. The book can also be used as a reference of ionic transport problems.

2008 | 304 pages | 107 b&w line drawings

978-0-19-953381-7, HARDBACK £59.50/$125.00

Electronic and Optical Properties of Conjugated Polymers

Available in... www.oxfordscholarship.com

William Barford, University of Oxford

'What makes *Electronic and Optical Properties of Conjugated Polymers* as a whole so enjoyable to read is that it gives a complete overview of the influence of correlation effects on the ground and excited states of those materials. It is a comprehensive treatise aimed at theoretical physicists and chemists working in the field and at graduate students and other researchers who need to analyse their data in terms of theoretical models.'

Physics Today

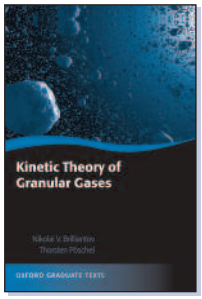
International Series of Monographs on Physics No. 129

2008 | 278 pages | 104 line illustrations

978-0-19-955378-5, PAPERBACK £35.00/$65.00
978-0-19-852680-3, HARDBACK £69.00/$150.00

NEW IN PAPERBACK

Kinetic Theory of Granular Gases



Nikolai V. Brilliantov and **Thorsten Pöschel**, both at Humboldt University, Germany

'*Kinetic Theory of Granular Gases* is an admirable contribution by two experts of this rapidly evolving field. In addition to technical details, it provides important insights that are essential for graduate students thinking about the similarities and differences between normal and granular gases. The book fills a significant gap, and I expect it will be adopted for graduate courses in both physics and engineering programs'

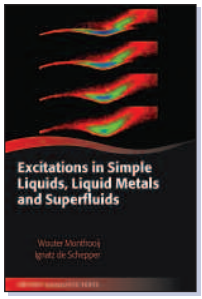
James W. Duffy, Physics Today

Oxford Graduate Texts

November 2010 | 344 pages | 25 b/w line and halftone illustrations

978-0-19-958813-8, PAPERBACK £27.50/$49.50

Excitations in Simple Liquids, Liquid Metals and Superfluids



Wouter Montfrooij, University of Missouri, Columbia MO, USA, and **Ignatz de Schepper**, Technical University Delft, The Netherlands

The rapid increase in capabilities at neutron and x-ray scattering sources has resulted in a wealth of highly accurate data on liquids, allowing for the testing of sophisticated models pertinent to the microscopic dynamics. This book is a practical guide on how to infer the maximum amount of information from the data using a minimum number of parameters, employing a fail-safe framework that ensures that pitfalls are avoided and that small differences between various liquids can be uncovered. Also, it details excitations for a range of liquids, covering simple fluids, colloids, mixtures, metals and superfluids. Results are interpreted in words rather than in equations, bringing to the fore new links between these fluids and between spontaneous fluctuations involving thousands of atoms down to those involving just a few.

Oxford Graduate Texts

September 2010 | 288 pages | 140 b/w line illustrations

978-0-19-956412-5, HARDBACK £45.00/$79.95

HAVE YOU SEEN?

Dove: *Structure and Dynamics* on page **4** in Oxford Master Series