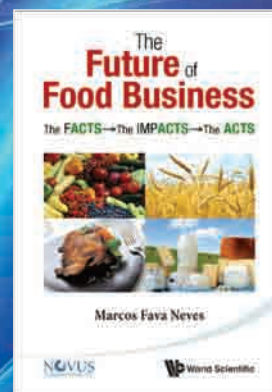
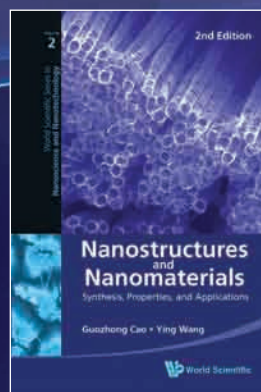
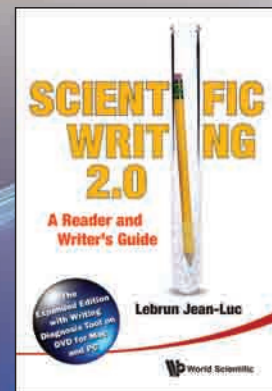
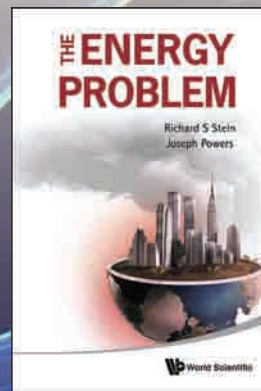
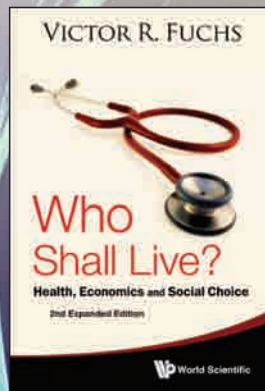
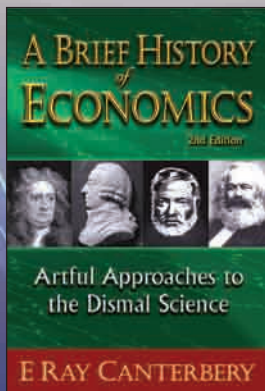


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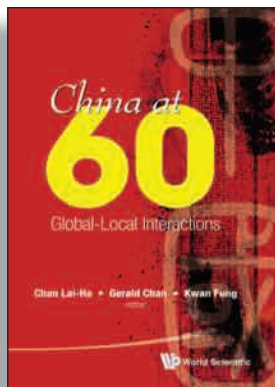
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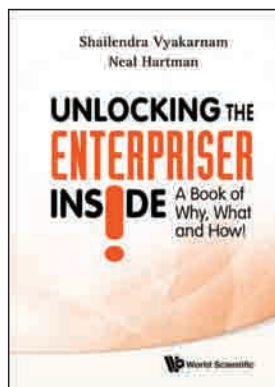
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## CHINA AT 60

Global-Local Interactions

edited by **Lai-Ha Chan** (*University of Technology, Sydney, Australia*),

**Gerald Chan** (*University of Auckland, New Zealand*) & **Fung Kwan** (*University of Macau, Macau*)

**C**hina at 60 explores the interactions between China and the world, over the course of 60 years of Communist Party rule since 1949 and the impact of these interactions on China's domestic development. To understand China's development experience and its transformation, it is necessary to examine the trajectory of development from pre-reform to post-reform periods. While the book may concur with previous findings on the changing development of China under economic reform, more importantly, it demonstrates the areas of continuity of the PRC's existence over the entire six decades. To that end, a dual theme — *change-and-continuity and global-local interactions* on China's development — is adopted to assess the historical development of China's policies in various issue areas over the past 60 years. The focus is chiefly on the domestic impacts of China's increasing engagement with the world, the global implications of China's reform efforts and growing power, and the long-lasting uniqueness of this rising non-European nation.

The book brings together a team of international experts to share their perspectives on global-local interactions within a range of different topics, including foreign policy, domestic politics, macroeconomic policy, the central-local relations, the People's Liberation Army, public health, energy security, finance and banking, foreign trade, and intellectual property rights, as well as changes in the state's policies towards interest groups such as ethnic minorities.

**Readership:** Researchers, academics, undergraduates and graduates; policy-makers, laypersons and professionals in contemporary Chinese Studies and Chinese politics.

## UNLOCKING THE ENTERPRISER INSIDE!

A Book of Why, What and How!

by **Shailendra Vyakarnam** (*University of Cambridge, UK*) &

**Neal Hartman** (*MIT Sloan School of Management, USA*)

**T**his book is based on a highly successful joint project between the University of Cambridge and the Massachusetts Institute of Technology (MIT), under the auspices of the Cambridge-MIT Institute. The project brings together communities of highly diverse individuals to share and learn how to be enterprising. It has run 17 times with the positive outcomes of not only training more enterprising individuals, but also building capacity in universities.

The unique feature of this book is how it covers learning in enterprising skills, while at the same time builds capacity in such a way that the alumni themselves can take what they have learned for the benefit of others. Through this book, the authors intend to share what they have learnt and to transmit their passion for this program to others for personal development. Hopefully, others will then repeat this positive experience and make a difference to their respective institutions and communities.

**Readership:** University faculties; institutions of applied sciences (further education); high schools; policy-makers; training consultants; managers of corporate training departments; managers of incubation centers associated with universities.

## THE FUTURE OF FOOD BUSINESS

The Facts, The Impacts and The Acts

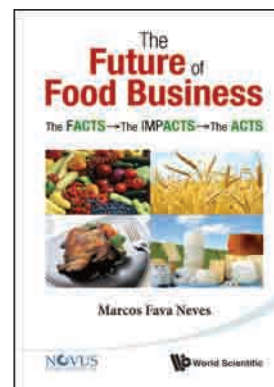
by **Marcos Fava Neves** (*University of Sao Paulo, Brazil*)

This unique book is a collection of articles published by the author in leading newspapers around the world. The papers focus on food chains and new concepts and ideas on how to increase competitiveness and value within the food and agricultural sectors.

The book gives a comprehensive description of the food chain and suggests methods and tools that can be used by companies to re-structure their innovative market strategies. It discusses up-to-date trends, world food crises, integrated food chains and strategic planning for companies in the food sector. It also covers international investments and the role of governments in food chains.

The book will motivate readers to rethink how business is conducted in the food chain and proposes new strategies for companies in the food sector. It is a must-read for entrepreneurs and researchers who are active in the food chain network.

**Readership:** Students and researchers of agribusiness and marketing courses; business professionals; environmentalists and general public interested in food chain.



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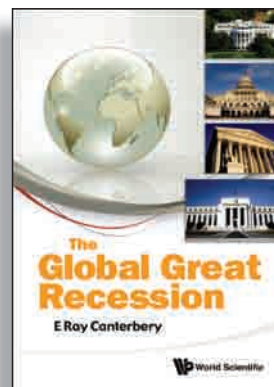
## THE GLOBAL GREAT RECESSION

by **E Ray Canterbury** (*Florida State University, USA*)

Canterbury's latest literary work provides a definitive account of the Great Recession of 2007–2010. It presents an output-employment framework for evaluating the Great Recession. A chapter on the Great Depression provides a basis for comparison while outlining the institutions still intact that moderated that downturn. Finally, the aftermath of the recession is accounted for.

**In 2003 John Kenneth Galbraith, who knew both Michal Kalecki and John Maynard Keynes, called Canterbury, "the best."**

**Readership:** General audience, economists, bankers and other professionals in the financial sector.



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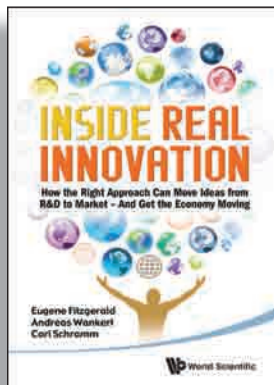
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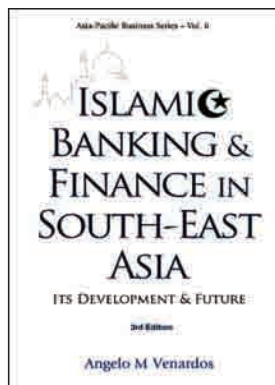
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**978-981-4350-42-6(pbk)**

**US\$48 / £31**

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## INSIDE REAL INNOVATION

How the Right Approach Can Move Ideas from R&D to Market — And Get the Economy Moving

by **Eugene Fitzgerald** (Massachusetts Institute of Technology, USA, Cornell University, USA & The Innovation Interface, USA), **Andreas Wankner** (Massachusetts Institute of Technology, USA, Cornell University, USA & The Innovation Interface, USA) & **Carl Schramm** (The Kauffman Foundation, USA)

This breakthrough book gives a ground-floor view of the innovation process, showing how fundamental innovators really work. Then, it connects that knowledge to the bigger picture, explaining why the “innovation system” in the United States is failing to work as it once did, and what all parties can do to build a better system for the future.

Inside Real Innovation is written by distinguished practicing innovators. They debunk the concept of innovation as a linear process, from research to development to product in the market. They present a simple model for understanding it as a highly iterative process, in which you cycle repeatedly through many factors in the areas of Technology, Market and Implementation — until the right pieces come together. Co-author Gene Fitzgerald tells the story of his own major innovation, tracing it along the winding path into products we use every day. The authors then proceed to tell the larger story of how the vaunted American “pipeline” for carrying this process has been pulled apart.

The book is a must-read for anyone with an interest in a strong innovation system: investors, innovators and people in corporations, universities and government.

**Readership:** Students and academics studying and teaching innovation; business professionals and general public interested in innovation processes.

## ISLAMIC BANKING AND FINANCE IN SOUTH-EAST ASIA

Its Development and Future

**(3rd Edition)**

by **Angelo M Venardos**

*Islamic Banking and Finance in South-East Asia* by Angelo M Venardos has been a “must read” since its first edition in 2005 and has already been translated to Arabic.

Now in its 3rd edition, the book offers important updates you can look forward to, starting with the foundations of Islamic banking, developments and issues. The reader is then treated to a timely survey of Islamic banking in five South-East Asian countries. Most of these chapters have been completely revamped from the last edition. One additional chapter has been added on Islamic Succession Planning, which introduces an increasingly essential aspect of Muslim life — that of managing one’s wealth now and in the afterlife.

Whether you are new to the topic or a practitioner in the industry, you will appreciate the accessible way in which the book is written. According to the Asian Journal of Comparative Law, the book gives a broad overview yet “manages to achieve this in a rather slim volume while providing depth of analysis at the same time”.

**Readership:** Investors; bankers; financial industry players; upper-level undergraduates and post graduate students in Islamic studies, banking and finance.

## MANAGING PROCESS INNOVATION

From Idea Generation to Implementation

by **Thomas Lager** (*Grenoble Ecole de Management, France*)

This book will take the reader through a systematic examination of the factors involved in process innovation. It starts with the considerations to be initiated in the boardroom and at group management level and develops into a hands-on guide for middle management and professional engineers directly involved in the innovation of process technology. The book initially puts process innovation in a corporate perspective, providing a framework for the development of a corporate process innovation strategy. Some new methodological tools are also introduced which support the targeting and proper roadmapping of improved process capabilities, and the progression of customer and end-user product demands, into raw-material specifications in a well-managed supply and demand chain.

Various aspects of the design of a process innovation organisation are reviewed in a later section. In the context of the development of process technology, this book advocates the importance of delineating and clarifying corporate work processes. Various environments for development work are discussed, from initial test work to pilot-plant testing and the use of demonstration facilities to achieve lean process innovation. The importance of an open collaborative approach is stressed. This includes involving external equipment manufacturers at an early stage as well as collaborative development of customers' use of the products in their production processes, with a view to excellence in future application development.

Process innovation will not, however, generate profit or reduce operating costs until the new or improved process technology is operating well in the plant. Best practice for start-up of new process technology and process plants is examined, starting with a fresh outlook on technology transfer in general. This often-neglected area of management of process innovation is, in fact, of an importance equivalent to that of a product launch in the development of new products. The final part of the book closes the circle, discussing how to implement and measure the strategic intent of process innovation. Improving the general performance of corporate process innovation is then covered by going through success factors and key performance indicators, and their aggregation on a corporate level.

**Readership:** Students and academics in innovation technology; R&D directors and CEOs and industry professionals in the innovation & technology management industry.

## NEGOTIATION EXCELLENCE

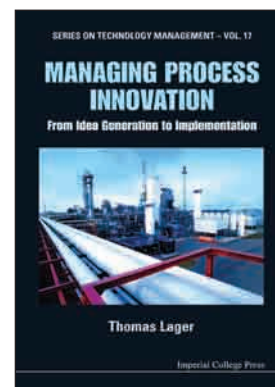
Successful Deal Making

edited by **Michael Benoiel** (*Singapore Management University, Singapore*)

*Negotiation Excellence: Successful Deal Making* was written by leading negotiation experts from top-rated universities in the USA and in Asia and its objective is to introduce the readers to the theory and best practices of effective negotiation. The book includes chapters ranging from: preparing and planning well for successful negotiations; building relationships and establishing trust between negotiators; negotiating creatively to create mutual value and win-win; understanding and dealing with negotiators from different cultures; and to managing ethical dilemmas.

In addition to emphasizing the link between theory and practice, *Negotiation Excellence: Successful Deal Making* includes deal examples such as: Renault-Nissan alliance; mega-merger between Arcelor and Mittal Steel; Kraft Foods' acquisition of Cadbury PLC, Walt Disney Company's negotiation with the Hong Kong government; and Komatsu, a Japanese firm's negotiation with Dresser, an American firm.

**Readership:** Students, researchers and entrepreneurs who are interested in the topics of Negotiation and Persuasion.



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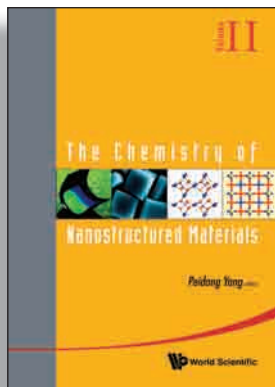
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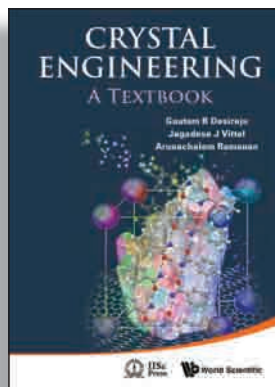
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**US\$49 / £32**

## THE CHEMISTRY OF NANOSTRUCTURED MATERIALS

### Volume II

edited by **Peidong Yang** (*University of California, Berkeley, USA*)

This book is a sequel to the first volume of *The Chemistry of Nanostructured Materials*. It covers the most exciting developments in the nanostructured materials field for the past five to ten years, with a particular focus on their applications in energy conversion and energy storage. Prominent authors of recognized authority in the field contribute their expertise in the review chapters.

**Readership:** Undergraduate and graduate students in nanochemistry.

## CRYSTAL ENGINEERING

A Textbook

by **Gautam R Desiraju** (*Indian Institute of Science*), **Jagadeese J Vittal** (*National University of Singapore*) & **Arunachalam Ramanan** (*Indian Institute of Technology Delhi*)

This book is important because it is the first textbook in an area that has become very popular in recent times. There are around 250 research groups in crystal engineering worldwide today. The subject has been researched for around 40 years but there is still no textbook at the level of senior undergraduates and beginning PhD students. This book is expected to fill this gap.

The writing style is simple, with an adequate number of exercises and problems, and the diagrams are easy to understand. This book consists major areas of the subject, including organic crystals and co-ordination polymers, and can easily form the basis of a 30 to 40 lecture course for senior undergraduates.

**Readership:** Undergraduate and graduate students in crystallography as well as academics and industry players.

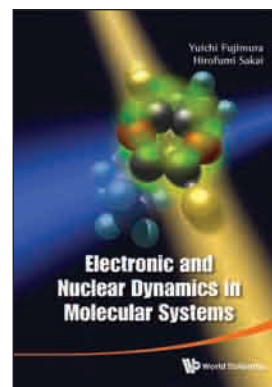
## ELECTRONIC AND NUCLEAR DYNAMICS IN MOLECULAR SYSTEMS

by **Yuichi Fujimura** (*Tohoku University, Japan*) & **Hirofumi Sakai** (*University of Tokyo, Japan*)

In recent years, there has been rapid growth in the research field of real-time observation of nuclear and electronic dynamics in molecules. Its time range extends from femtoseconds to attoseconds. This has been made possible by the development of both laser technology and time-dependent theoretical treatments. Indeed, this research field is arguably the most active one in molecular science, second only to femtosecond chemistry. The outcome of the research is expected to make an important contribution to physics, materials science and biology as well as chemistry.

In this monograph, the fundamental theories and methods, as well as experimental methods and results, of real-time observation of both nuclear and electronic motions in molecular systems are described. It is suitable for researchers who want to make an active contribution to the new research field and for graduate students who are interested in ultra-fast nuclear and electron dynamics in molecular systems.

**Readership:** Academics, postgraduates and researchers in photochemistry, theoretical chemistry, quantum chemistry and physical chemistry.



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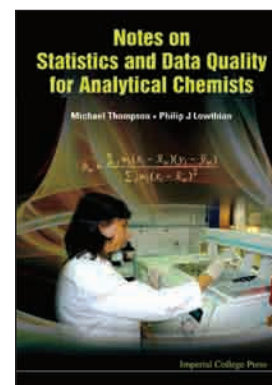
## NOTES ON STATISTICS AND DATA QUALITY FOR ANALYTICAL CHEMISTS

by **Michael Thompson** (*Birkbeck University of London, UK*) & **Philip J Lowthian** (*Birkbeck University of London, UK*)

This book is intended to help analytical chemists feel comfortable with more commonly used statistical operations and help them make effective use of the results. Emphasis is put upon computer-based methods that are applied in relation to measurement and the quality of the resulting data. The book is intended for analytical chemists working in industry but is also appropriate for students taking first degrees or an MSc in analytical chemistry.

The authors have divided this book into quite short sections, each dealing with a single topic. The sections are as far as possible self-contained, but are extensively cross-referenced. The book can therefore be used either systematically by reading the sections sequentially, or as a quick reference by going directly to the topic of interest. Every statistical method and application covered has at least one example where the results are analysed in detail. This enables readers to emulate this analysis on their own examples. All of the datasets used in examples are available for download, so that readers can compare their own output with that of the book and thus verify that they are entering data correctly into the statistical package that they happen to use.

**Readership:** Analytical chemists working in industry, students taking first degrees or an MSc in analytical chemistry.



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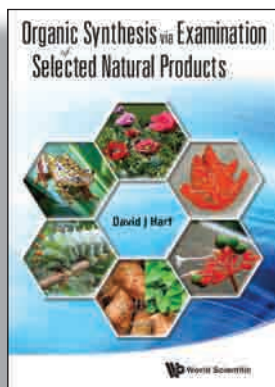
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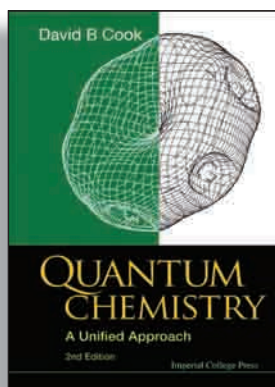
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## ORGANIC SYNTHESIS VIA EXAMINATION OF SELECTED NATURAL PRODUCTS

by **David J Hart** (*The Ohio State University, USA*)

This book is written for advanced graduate and undergraduate students to expose them to a variety of strategies for the synthesis of organic compounds. This is done largely within the context of natural products synthesis, but some unnatural products synthesis is also included. Multiple approaches to each group of synthesis targets are presented, and the approaches are compared with one another with an eye on similarities and differences. General problems in organic synthesis (for example, strategies for the preparation of 6-membered rings and 5-membered rings, the importance of oxidation state, the problem of acyclic diastereoselectivity, the problem of controlling absolute stereochemistry, the importance of functional group relationships) are introduced early in the book and revisited throughout the text within the context of a variety of structurally unrelated natural products.

The book provides readers with a somewhat historical overview of organic and natural products chemistry, and spans synthetic methodology that dates from the 1940's to the present time. It is written in a style that readers will find entertaining at times. It also contains lots of useful references with complete titles provided.

**Readership:** Undergraduate/graduate students in organic chemistry and chemists with experience in organic synthesis.

## QUANTUM CHEMISTRY A Unified Approach (2nd Edition)

by **David B Cook** (*University of Sheffield, UK*)

This book is a presentation of a qualitative theory of chemical bonding, stressing the physical processes which occur on bond formation. It differs from most (if not all) other books in that it does not seek to "rationalise" the phenomena of bonding by a series of mnemonic rules. A principal feature is a unified and consistent treatment across all types of bonding in organic, inorganic, and physical chemistry.

Each chapter has an Assignment Section containing "problems" which might be usefully attempted to improve the understanding of the new material in that chapter.

The new edition has had several appendices added which give support to concepts which, if included in the main text, would have hindered the main thrust of the presentation. These new appendices are an attempt to clarify oversights and errors which have been tacitly ignored and which have now become part of the conventional wisdom.

**Readership:** Undergraduate and beginning graduate students in chemistry-containing studies; students at a similar level in physical and biological sciences; tutors and lecturers.

## A SERIOUS GLANCE AT CHEMISTRY

Basic Notions Explained

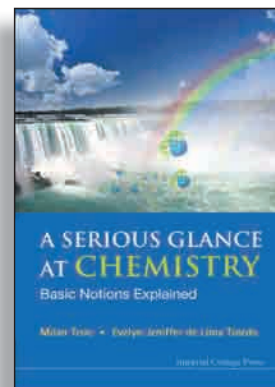
by **Milan Trsic & Evelyn Jeniffer de Lima Toledo** (*Universidade de São Paulo, Brazil*)

This book primarily focuses on what is generally taught in the first two years of an undergraduate university chemistry program. Yet, it is suitable not just for students, but professionals in fields where a basic background in chemistry is required as well.

Topics in electronic structure of atoms and molecules, biochemistry, chemical reactions, energy production and even modern topics such as quantum chemistry and molecular orbital theory are covered comprehensively, while eschewing the more complex mathematics and technicalities. The authors, thus, place much emphasis on learning concepts in this highly accessible work. At the same time, they have taken care to highlight the pivotal role chemistry has to play in the ongoing challenge of climate change. As the world continues to search for alternative fuel and energy sources, this book discusses the relative merits of the latest trends in alternative energy production, and allows readers to draw their own conclusions on their viability.

Clearly, this is a remarkable textbook, unique in its clear presentation of both basic and modern concepts in chemistry. Any reader with a basic understanding of high-school chemistry will find their understanding of the subject deepened, and their perspective broadened.

**Readership:** Undergraduates, graduates, professionals and general public interested in chemistry.



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**Hardcover: 204pp**

**Pub. date: Oct 2010**

**978-1-84816-530-4**

**US\$72 / £45**

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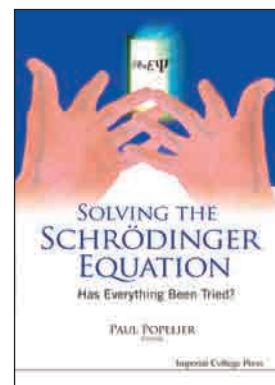
## SOLVING THE SCHRÖDINGER EQUATION

Has Everything Been Tried?

edited by **Paul Popelier** (*University of Manchester, UK*)

The Schrödinger equation is the master equation of quantum chemistry. The founders of quantum mechanics realised how this equation underpins essentially the whole of chemistry. However, they recognised that its exact application was much too complicated to be soluble at the time. More than two generations of researchers were left to work out how to achieve this ambitious goal for molecular systems of ever-increasing size. This book focuses on non-mainstream methods to solve the molecular electronic Schrödinger equation. Each method is based on a set of core ideas and this volume aims to explain these ideas clearly so that they become more accessible. By bringing together these non-standard methods, the book intends to inspire graduate students, postdoctoral researchers and academics to think of novel approaches. Is there a method out there that we have not thought of yet? Can we design a new method that combines the best of all worlds?

**Readership:** Graduate students, postdoctoral researchers and academics in the fields of computational chemistry, theoretical chemistry, super computing, molecular physics and solid state physics.



**Rights Information:**

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**Hardcover: 400pp (approx.)**

**Pub. date: Oct 2011**

**978-1-84816-724-7**

**US\$130 / £81**

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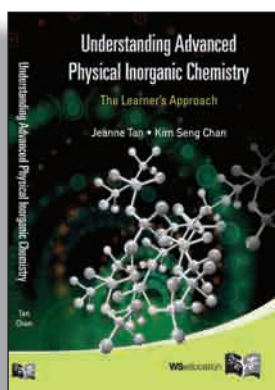
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**Hardcover: 350pp (approx.)**

**Pub. date: Oct 2011**

**978-1-84816-677-6**

**US\$98 / £61**



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Non-English language  
rights available.

**Paperback: 488pp**

**Pub. date: Dec 2010**

**978-981-4317-26-9(pbk)**

**US\$28 / £17**

## SUPPORTED METALS IN CATALYSIS (2nd Edition)

by **James A Anderson** (*University of Aberdeen, UK*)

With contributions from experts in supported metal catalysis from both the industry and academia, this book presents the latest developments in characterization and application of supported metals in heterogeneous catalysis. In addition to thorough and updated coverage of the traditional aspects of heterogeneous catalysis such as preparation, characterization and use in well-established technologies such as Naphtha reforming, the book also includes emerging areas where supported metal catalysis will make significant contributions to future developments, such as fuel cells and fine chemicals synthesis.

The second edition of *Supported Metals in Catalysis* comes complete with new and updated chapters containing important summaries of research in a rapidly evolving field. Very few other books deal with this highly pertinent subject matter, and as such, it is a must-have for anyone working in the field of heterogeneous catalysis.

**Readership:** Postgraduate students and academic and industrial researchers working in the area of heterogeneous catalysis.

## UNDERSTANDING ADVANCED PHYSICAL INORGANIC CHEMISTRY

The Learner's Approach

by **Jeanne Tan & Kim Seng Chan** (*Raffles Institution, Singapore*)

Written for students taking the A-level examinations, this textbook covers essential topics under the University of Cambridge stipulated A-level chemistry syllabus. It is written in such a way as to guide the reader through the understanding and applications of essential chemical concepts by introducing a discourse feature — the asking and answering of questions — that stimulates coherent thinking and hence, elucidates ideas. Based on the Socratic Method, questions are implanted throughout the book to help facilitate the reader's development in forming logical conclusions of concepts. The book helps students to master fundamental chemical concepts in a simple way.

Topics are explored through an explanatory and inquiry-based approach. They are interrelated and easy to understand, with succinct explanations/examples being included, especially on areas that students frequently find difficult. Topics address the **whys** and **hows** behind key concepts to be mastered, so that the concepts are made understandable and intuitive for students. The focus is on conceptual learning so as to equip students with knowledge for critical learning and problem solving.

Existing A-levels textbooks and guidebooks generally introduce concepts in a matter-of-fact manner. This book adds a unique pedagogical edge which few can rival. Through their many years of teaching experiences, the authors have acquired a sound awareness of common students' misconceptions which are relayed through the questions and thus help to reinforce concepts learnt.

**Readership:** Junior college students and teachers.

## UNDERSTANDING VOLTAMMETRY (2nd Edition)

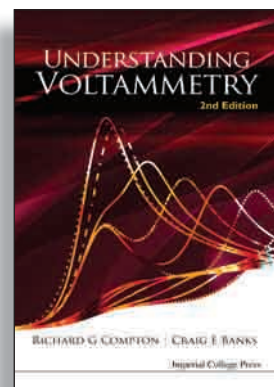
by **Richard G Compton** (*University of Oxford, UK*) &  
**Craig E Banks** (*Manchester Metropolitan University, UK*)

The power of electrochemical measurements in respect of thermodynamics, kinetics and analysis is widely recognized but the subject can be unpredictable to the novice even if they have a strong physical and chemical background, especially if they wish to pursue the study of quantitative measurements further. Accordingly, some significant experiments are perhaps wisely never attempted while the literature is sadly replete with flawed attempts at rigorous voltammetry.

This textbook considers how to go about designing, explaining and interpreting experiments centered around various forms of voltammetry (cyclic, microelectrode, hydrodynamic, etc.). The reader is assumed to have attained a knowledge equivalent to Master's level of physical chemistry but no exposure to electrochemistry in general, or voltammetry in particular. While the book is designed to "stand alone", references to important research papers are given to provide an introductory entry into the literature.

In comparison to the first edition, two new chapters — transport via migration and nanoelectrochemistry — are added. Minor changes and updates are also made throughout the textbook to facilitate enhanced understanding and greater clarity of exposition.

**Readership:** Graduate students pursuing electrochemistry and electroanalytical studies, as well as researchers and industrialists working in the area.



### Rights Information:

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**Hardcover: 444pp**

**Pub. date: Nov 2010**

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**US\$115 / £71**

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**Paperback: 444pp**

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**US\$64 / £40**

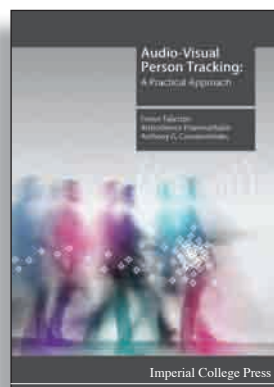
## AUDIO VISUAL PERSON TRACKING

A Practical Approach

by **Fotios Talantzis, Aristodemos Pnevmatikakis** (*Athens Information Technology, Greece*)  
& **Anthony G Constantinides** (*Imperial College London, UK*)

This book deals with the creation of the algorithm backbone that enables a computer to perceive humans in a monitored space, by processing the signals that humans use in order to perform a task, i.e., audio and video. To do so, computers use sensors and algorithms to detect and track multiple interacting humans, by way of their faces and hands or their voices. This application domain is challenging, because audio and visual signals are cluttered by both background and foreground objects. After establishing particle filtering as the framework for tracking, audio, visual and also audiovisual tracking are then explained. Each method is analyzed, starting with sensor configurations, detection for tracker initialization and the trackers themselves. Techniques to fuse the modalities are then considered. Instead of offering a monolithic approach to the tracking problem, this book also focuses on implementation by providing MATLAB code for every presented component. This way, the reader can connect every presented concept with a corresponding piece of code that follows immediately after the theory. Finally, the applications of the various tracking systems in different domains are studied and considered.

**Readership:** Graduate students, academics and researchers in signal processing, machine perception/computer vision and electrical & electronic engineering.



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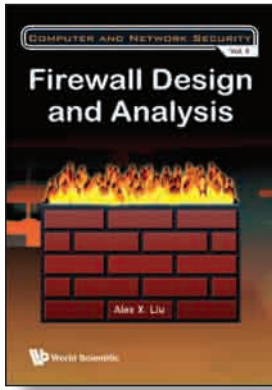
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**Hardcover: 240pp (approx.)**

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**US\$85 / £53**

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**Hardcover: 124pp**

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**US\$58 / £38**

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**Hardcover: 300pp (approx.)**

**Pub. date: Dec 2011**

**978-1-84816-748-3**

**US\$95 / £62**

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## FIREWALL DESIGN AND ANALYSIS

by **Alex X Liu** (*Michigan State University, USA*)

This unique book represents the first rigorous and comprehensive study of firewall policy design and analysis. Firewalls are the most critical and widely deployed intrusion prevention systems. Designing new firewall policies and analyzing existing firewall policies have been difficult and error-prone. This book presents scientifically sound and practically useful methods for designing and analyzing firewall policies.

This book is useful to a variety of readers. First, it can be used as a handbook for network/firewall administrators and network security professionals. Second, it can be used as an advanced textbook for graduate students and senior undergraduate students in computer science and engineering. Third, it is also suitable for non-experts in network security who wish to understand more about firewalls. The presentation of the book is detailed enough to capture the interest of curious readers, and complete enough to provide the necessary background material needed to delve further into the subject of firewalls and network security.

**Readership:** Computer scientists, network and firewall administrators, undergraduate and graduate students in computer science, non-experts interested in network security.

## THIS PERVASIVE DAY

The Potential and Perils of Pervasive Computing

edited by **Jeremy Pitt** (*Imperial College London, UK*)

Imagine a world where your clothes sense your blood pressure, heart rate and body temperature. Suppose the sensors transmit this information to 'the cloud', continuously and unobtrusively. Suppose artificial intelligence in 'the cloud' detects an anomaly. Suppose it tells your doctor: sighs of relief all round. But then suppose it tells an actuary, who tells your insurer, who tells your employer ...

This is the world of pervasive adaptation.

*This Pervasive Day* explores the potential — and possible pitfalls — of daily living with pervasive adaptive computing. This is the result of saturating ourselves and our physical environment with sensors, cameras and devices, all connected to and inter-connected by global networks and computers, which can run increasingly intelligent machine-learning and data fusion algorithms on datasets that could be generated by the entire human population.

*This Pervasive Day* is an insightful read for both interested technologists and lay readers. Written by experienced technologists with a deep interest in computational intelligence, human-computer interaction and ambient systems, *This Pervasive Day* is a remarkable single source of reference — a fusion of several technical disciplines that makes for a broad scope of investigation within the domains of pervasive computing.

**Readership:** Graduates and researchers in computer science, and the general public.

## RANDOMNESS THROUGH COMPUTATION

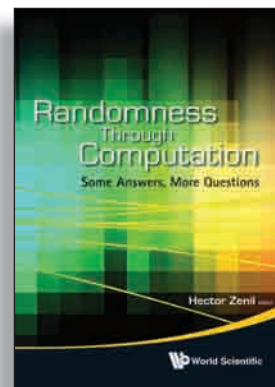
Some Answers, More Questions

edited by **Hector Zenil** (Wolfram Research Inc., USA)

This review volume consists of a set of chapters written by leading scholars, most of them founders of their fields. It explores the connections of Randomness to other areas of scientific knowledge, especially its fruitful relationship to Computability and Complexity Theory, and also to areas such as Probability, Statistics, Information Theory, Biology, Physics, Quantum Mechanics, Learning Theory and Artificial Intelligence. The contributors cover these topics without neglecting important philosophical dimensions, sometimes going beyond the purely technical to formulate age old questions relating to matters such as determinism and free will.

The scope of *Randomness Through Computation* is novel. Each contributor shares their personal views and anecdotes on the various reasons and motivations which led them to the study of Randomness. Using a question and answer format, they share their visions from their several distinctive vantage points.

**Readership:** Students and researchers in the broader fields of computer science, mathematics and physics; the general public interested in science and its philosophy.



**Rights Information:**

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**Hardcover: 440pp**

**Pub. date: Feb 2011**

**978-981-4327-74-9**

**US\$90 / £56**

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## A BRIEF HISTORY OF ECONOMICS

Artful Approaches to the Dismal Science

**(2nd Edition)**

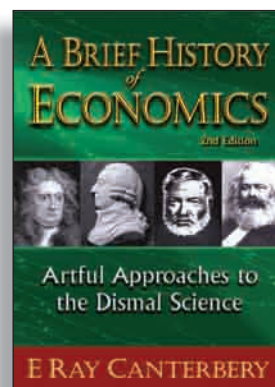
by **E Ray Canterbury** (Florida State University, USA)

Blending past and present, this brief history of economics is the perfect book for introducing students to the field.

*A Brief History of Economics* illustrates how the ideas of the great economists not only influenced societies but were themselves shaped by their cultural milieu. Understanding the economists' visions — lucidly and vividly unveiled by Canterbury — allows readers to place economics within a broader community of ideas. Magically, the author links Adam Smith to Isaac Newton's idea of an orderly universe, F Scott Fitzgerald's *The Great Gatsby* to Thorstein Veblen, John Steinbeck's *Grapes of Wrath* to the Great Depression, and Tom Wolfe's *The Bonfire of the Vanities* to Reaganomics. The second edition is right up-to-date with a lively discussion of the economic crises of 2007–2010.

Often humorous, Canterbury's easy style will make the student's first foray into economics lively and relevant. Readers will dismiss "dismal" from the science.

**Readership:** Undergraduate and foundation level students, and laymen.



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**Paperback: 560pp**

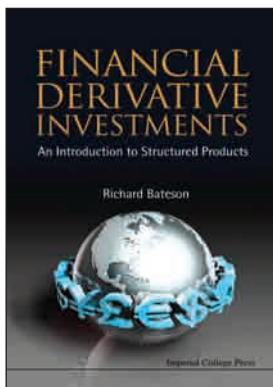
**Pub. date: Dec 2010**

**978-981-4304-80-1(pbk)**

**US\$43 / £28**

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**Rights Information:**

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**Hardcover: 376pp**

**Pub. date: Jun 2011**

**978-1-84816-711-7**

**US\$75 / £50**

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## FINANCIAL DERIVATIVE INVESTMENTS

An Introduction to Structured Products

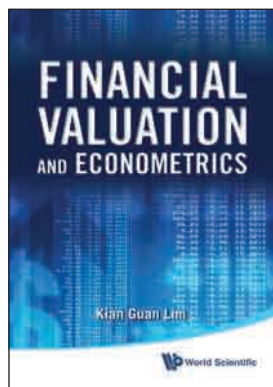
by **Richard D Bateson** (*University College London, UK*)

Structured products are sold to a wide range of retail, high net worth and institutional investors, with over £15bn of structured investments sold in the UK in 2009. Based on a non-specialist graduate lecture course given at University College London (UCL), this book provides an invaluable introduction to the fast growing world of derivative investments and the technology used in their design, pricing and structuring.

The book gives a comprehensive overview of structuring and trading products based on the author's extensive international experience in structuring investment products across a range of underlying asset classes, including equities, interest rates, credit and hybrids. The product coverage ranges from equity investments such as reverse convertibles and basket correlation products, to credit products such as first-to-default notes and the notorious "CDO<sup>2</sup>".

Written in a simple and accessible manner, this book will be of interest to students, bankers, investors and other finance professionals.

**Readership:** Undergraduate and graduate students studying finance, economics and physical sciences; business professionals, bankers, investors, independent financial advisors, accountants and lawyers.

**Rights Information:**

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**Hardcover: 496pp**

**Pub. date: Mar 2011**

**978-981-4307-95-6**

**US\$90 / £56**

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## FINANCIAL VALUATION AND ECONOMETRICS

by **Kian Guan Lim** (*Singapore Management University, Singapore*)

This book brings together domains in financial asset pricing and valuation, financial investment theory, econometrics modeling, and the empirical analyses of financial data by applying appropriate econometric techniques. These domains are highly intertwined and should be properly understood in order to correctly and effectively harness the power of data and methods for investment and financial decision-making. The book is targeted at advanced finance undergraduates and beginner professionals performing financial forecasts or empirical modeling who will find it refreshing to see how forecasting is not simply running a least squares regression line across data points, and that there are many minefields and pitfalls to avoid, such as spurious results and incorrect interpretations.

**Readership:** Advanced finance undergraduates and beginner professionals performing financial forecasts or empirical modeling.

## THE HANDBOOK OF MICROFINANCE

edited by **Beatriz Armendáriz** (University College London, UK & Harvard University, USA) & **Marc Labie** (Université de Mons, Belgium)

The *Handbook of Microfinance* showcases an expansive collection of works from leading academics and field practitioners. In an attempt to understand the enormous gap between the limited number of clients that are currently benefiting from microfinance services, and the huge number of potential clients that are not, the selected contributions in this comprehensive handbook have one common thread: the prevailing mismatch between demand by clients of microfinance institutions and potential clients selecting themselves out for their demand for a wider array of financial products which is not being met.

The scope of the book is wide, and explores successes and failures, main challenges and debates, methodologies for impact evaluation via random trials, leading trends in Asia versus Latin America, main efforts in Africa, the importance of value chains in Central America, ethical and gender issues, savings, microinsurance, governance, commercialization trends and the potential advantages and disadvantages of it. This exhaustive Handbook also features main lessons from informal finance and 19th-century credit cooperatives addressing the above-mentioned mismatch.

**Readership:** Researchers interested in Microfinance, graduate students and advanced undergraduates in economics, social sciences or development.



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**Hardcover: 704pp**

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**US\$190 / £124**

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## INTERNATIONAL ECONOMICS Global Markets and Competition (3rd Edition)

by **Henry Thompson** (Auburn University, USA)

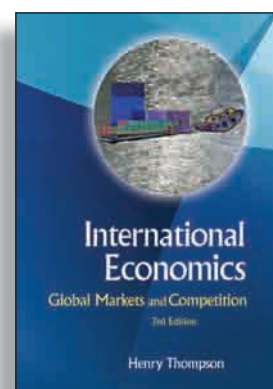
This book integrates the microeconomics of trade with international finance and open economy macroeconomics. The emphasis throughout is on international competition and the limits of trade policy.

This text presents the critical issues of international trade and finance. Trade theory includes partial equilibrium market analysis, neoclassical trade models, constant cost production, factor proportions production, and models of industrial organization. The text integrates concepts from international finance and the basic models of open economy macroeconomics.

The presentation uses graphs with numerical examples making the theory easier for students, especially when combined with more general classroom presentation. The text does not assume previous courses in intermediate economics or calculus but develops the theory with simple tools. Numerous questions give students confidence to use the theoretical models and concepts.

Over 250 boxed examples illustrate the theory, many with visually descriptive charts and plots. The text is concise in its presentation style. Students enjoy its clear straightforward style and instructors notice the difference on exams.

**Readership:** Undergraduates in international economics.



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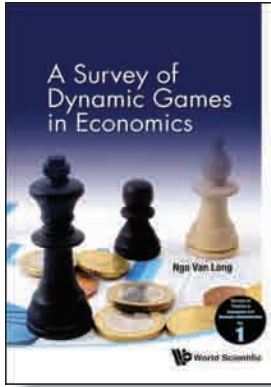
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**US\$68 / £45**

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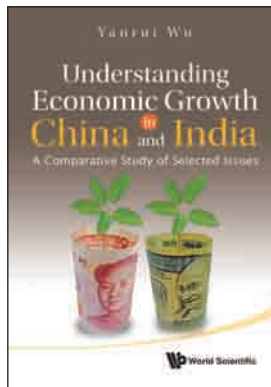
**Hardcover: 292pp**

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**Hardcover: 180pp (approx.)**

**Pub. date: Dec 2011**

**978-981-4287-78-4**

**US\$73 / £51**

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## A SURVEY OF DYNAMIC GAMES IN ECONOMICS

by **Van Long Ngo** (*McGill University, Canada*)

This book provides readers with a comprehensive survey of models of dynamic games in economics, including an extensive coverage of numerous fields of applications. It will also discuss and explain main concepts and techniques used in dynamic games, and inform readers of its major developments while equipping them with tools and ideas that will aid in the formulation of solutions for problems. *A Survey of Dynamic Games in Economics* will interest those who wish to study more about the conceptions, approaches and models that are applied in the domain of dynamic games.

**Readership:** Graduate students in economics, and academic economists, who are interested in applications of game theory to diverse fields of economics (such as development economics, resource and environmental economics, industrial organization).

## UNDERSTANDING ECONOMIC GROWTH IN CHINA AND INDIA

A Comparative Study of Selected Issues

by **Yanrui Wu** (*University of Western Australia, Australia*)

Due to their sheer size and stake in the global economy, China and India have long been identified as the two giant economies of Asia. This book presents a highly engaging comparative study on the economic growth of China and India by examining the significance of the role of productivity in economic growth as well as their relations with regional partners. Through detailed analysis of trade, services, energy and pollution, readers are invited to follow the two distinctive development trajectories taken by the two countries, as well as challenged to consider the issue of sustainability of growth in the future.

**Readership:** Economists, business analysts, China and India watchers.

## WHO SHALL LIVE?

Health, Economics, and Social Choice

### (2nd Expanded Edition)

by **Victor R Fuchs** (Stanford University, USA)

Since the first edition of *Who Shall Live?* (1974) over 100,000 students, teachers, physicians, and general readers from more than a dozen fields have found this book to be a reader-friendly, authoritative introduction to economic concepts applied to health and medical care. Fuchs provides clear explanations and memorable examples of the importance of the non-medical determinants of health, the dominant role of physicians in health care expenditures, the necessity of choices about health at the individual and societal levels, and many other compelling themes.

Now, in a new introduction of some 8,000 words including new tables and figures, Fuchs, often called the "Dean of health economists", concisely summarizes the major changes of the past 37 years in health, medical care, and health policy. He focuses primarily on the United States but includes remarks about health policy in other countries, and addresses the question of whether national health care systems are becoming more alike. In addition to reviewing changes, the introduction explains why health expenditures grow so rapidly, why health spending in the United States is so much greater than in other countries, and what physicians need in order to practice cost-effective medicine.

This second expanded edition also includes recent papers by Fuchs on the economics of aging, the socio-economic correlates of health, the future of health economics, and his policy recommendations for the United States to secure universal coverage, control of costs, and improvement in the quality of care. As was true of the first expanded edition (1998), this book will be welcomed by current students and life-long learners in economics, other social and behavioral sciences, medicine, public health, law, business, public policy, and other fields who want to understand the relation between health, economics, and social choice.

**Readership:** Undergraduates in economics, sociology and public policy; graduates in medicine, public health and public policy; physicians and other health professionals.

## ELECTRICITY GENERATION USING WIND POWER

by **William Shepherd** (University of Bradford, UK) & **Li Zhang** (University of Leeds, UK)

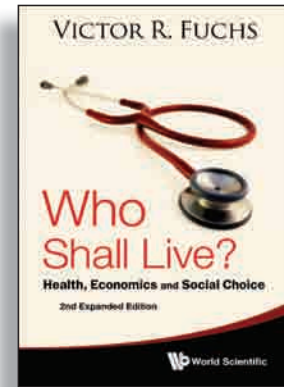
The use of the wind as an energy source is increasing and growing worldwide. Wind energy is an important non-fossil option to supplement fossil (coal, natural gas and oil) and nuclear fuels for the generation of electricity.

Many parts of the world, particularly the coastlines of Western Europe, North Africa, North and South America, India, Eastern Russia, China, the Philippines, Australia and New Zealand, experience a high annual incidence of wind energy. The United Kingdom of Great Britain and Northern Ireland, together with the Republic of Ireland form a particularly windy location, being favoured with strong westerly winds. The technology of the design and installation of wind turbines and wind farms are, in fact, well established. Operational practice, though, is still being developed as engineers learn by experience.

This book is written for electrical engineers concerned with the use of wind power for generating electricity. It incorporates some meteorological features of international wind supply plus a survey of the past and present wind turbines with technical assessment of the choice of turbine sites. Detailed coverage is given to the different types of electrical generator machines used and the electronic control devices employed in modern turbine systems.

Importantly, this book devotes full chapters to the integration of wind farms into established electrical grid supply systems, and the environmental and economic aspects of wind generation. Engineers will be drawn to the practical approach in this book, featuring worked numerical examples — complete with answers — at the end of some chapters.

**Readership:** Electrical power engineers, undergraduate and postgraduate students of electrical engineering.



#### Rights Information:

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**Hardcover: 300pp (approx.)**

**Pub. date: Jul 2011**

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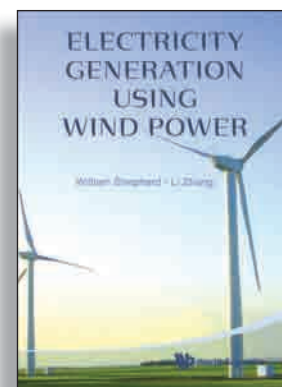
**US\$70 / £46**

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**Paperback: 300pp (approx.)**

**978-981-4354-88-2 (pbk)**

**US\$42 / £27**



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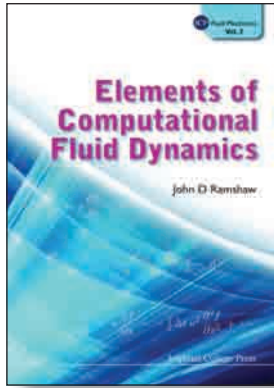
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**US\$85 / £55**

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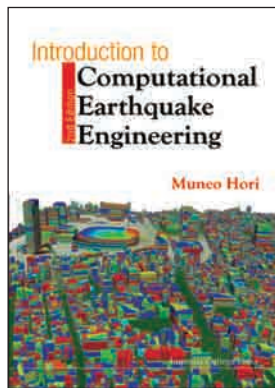
**US\$69 / £43**

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**Paperback: 140pp**

**978-1-84816-705-6(pbk)**

**US\$32 / £20**

**Rights Information:**

Non-English language rights available.

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**Hardcover: 440pp**

**Pub. date: May 2011**

**978-1-84816-397-3**

**US\$118 / £78**

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**Paperback: 440pp**

**978-1-84816-398-0(pbk)**

**US\$74 / £49**

## ELEMENTS OF COMPUTATIONAL FLUID DYNAMICS

by **John D Ramshaw** (*Portland State University, USA*)

This book is a brief introduction to the fundamental concepts of computational fluid dynamics (CFD). It is addressed to beginners, and presents the ABCs or bare essentials of CFD in their simplest and most transparent form. The approach taken is to describe the principal analytical tools required, including truncation-error and stability analyses, followed by the basic elements or building blocks of CFD, which are numerical methods for treating sources, diffusion, convection, and pressure waves. Finally, it is shown how those ingredients may be combined to obtain self-contained numerical methods for solving the full equations of fluid dynamics. The book should be suitable for self-study, as a textbook for CFD short courses, and as a supplement to more comprehensive CFD and fluid dynamics texts.

**Readership:** Undergraduates, graduate students, and professionals seeking a simple brief introductory survey of the basic concepts of computational fluid dynamics.

## INTRODUCTION TO COMPUTATIONAL EARTHQUAKE ENGINEERING (2nd Edition)

by **Muneo Hori** (*University of Tokyo, Japan*)

*Introduction to Computational Earthquake Engineering* covers solid continuum mechanics, finite element method and stochastic modeling comprehensively, with the second and third chapters explaining the numerical simulation of strong ground motion and faulting, respectively. Stochastic modeling is used for uncertain underground structures, and advanced analytical methods for linear and non-linear stochastic models are presented. The verification of these methods by comparing the simulation results with observed data is then presented, and examples of numerical simulations which apply these methods to practical problems are generously provided. Furthermore three advanced topics of computational earthquake engineering are covered, detailing examples of applying computational science technology to earthquake engineering problems.

**Readership:** Academic and industry: engineers, students; advanced undergraduates in the field of earthquake engineering.

## AN INTRODUCTION TO ELECTRONIC MATERIALS FOR ENGINEERS (2nd Edition)

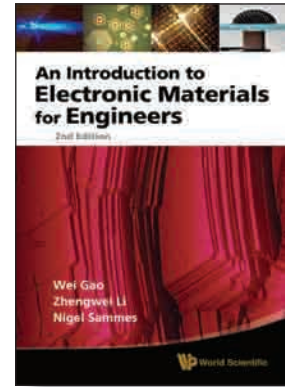
by **Wei Gao, Zhengwei Li** (University of Auckland, New Zealand) & **Nigel Sammes** (Colorado School of Mines, USA)

**A**n *Introduction to Electronic Materials for Engineers* aims to give a basic understanding and comprehensive overview of a wide range of materials, such as conducting materials, semiconductors, magnetic materials, optical materials, dielectric materials, superconductors, thermoelectric materials and ionic materials. The new chapters added into this latest edition include thin film electronic materials, organic electronic materials and nanostructured materials. These chapters aim to reflect the new developments made in electronic materials and nanotechnology research towards the design and fabrication of modern equipment and electronic devices.

This book is designed for undergraduate engineering and technology students who have background knowledge of physics and chemistry, as well as for engineers who work on materials processing or application, or electric/electronic engineering.

It emphasizes on the synthesis, performance and application of electronic materials and will enable readers to understand and relate to the devices and materials.

**Readership:** Students, professionals (engineering), non-experts interested in electronic materials.



### Rights Information:

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**Hardcover: 564pp**

**Pub. date: May 2011**

**978-981-4293-69-3**

**US\$98 / £65**

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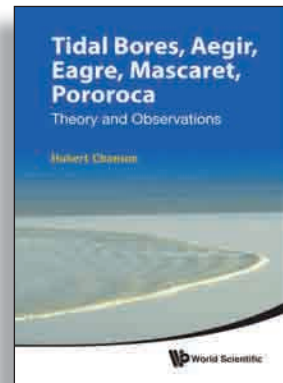
## TIDAL BORES, AEGIR, EAGRE, MASCARET, POROROCA

Theory and Observations

by **Hubert Chanson** (The University of Queensland, Australia)

**A** tidal bore is a series of waves propagating upstream as the tidal flow turns to rising. It forms during spring tide conditions when the tidal range exceeds 4 to 6 m and the flood tide is confined to a narrow funnelled estuary. Its existence is based upon a fragile hydrodynamic balance between the tidal amplitude, the freshwater river flow conditions and the river channel bathymetry, and it is shown that this balance may be easily disturbed by changes in boundary conditions and freshwater inflow. This book demystifies the physics of a tidal bore and it thoroughly documents the tidal bores on our planet with reliable and accurate information. It aims to cultivate a passion for a beautiful, but fragile geophysical process, with in-depth updated content and by over 190 illustrations and photographs.

**Readership:** Undergraduate and graduate students, researchers and general public interested in tidal bores.



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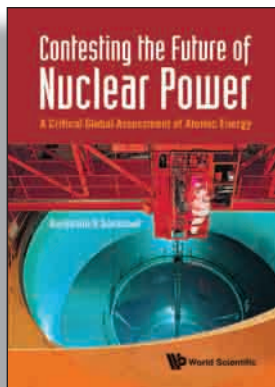
**Hardcover: 300pp (approx.)**

**Pub. date: Jun 2011**

**978-981-4335-41-6**

**US\$96 / £60**

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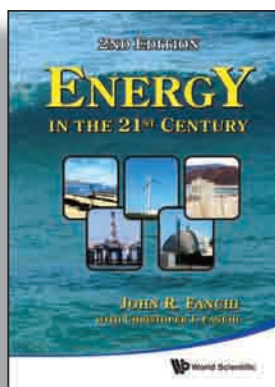
**Hardcover: 308pp**

**Pub. date: May 2011**

**978-981-4322-75-1**

**US\$70 / £46**

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**Rights Information:**

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**Hardcover: 376pp**

**Pub. date: Oct 2010**

**978-981-4322-04-1**

**US\$120 / £74**

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**Paperback: 376pp**

**978-981-4324-54-0(pbk)**

**US\$58 / £36**

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## CONTESTING THE FUTURE OF NUCLEAR POWER

A Critical Global Assessment of Atomic Energy

by **Benjamin K Sovacool** (*National University of Singapore, Singapore*)

This book provides a concise but rigorous appraisal about the future of nuclear power and the presumed nuclear renaissance. It does so by assessing the technical, economic, environmental, political, and social risks related to all aspects of the nuclear fuel cycle, from uranium mills and mines to nuclear reactors and spent fuel storage facilities. In each case, the book argues that the costs of nuclear power significantly outweigh its benefits. It concludes by calling for investments in renewable energy and energy efficiency as a better path towards an affordable, secure, and socially acceptable future.

The prospect of a global nuclear renaissance could change the way that energy is produced and used the world over. Sovacool takes a hard look at who would benefit — mostly energy companies and manufacturers — and who would suffer — mostly taxpayers, those living near nuclear facilities, and electricity customers. This book is a must-read for anyone even remotely concerned about a sustainable energy future, and also for those with a specific interest in modern nuclear power plants.

**Readership:** Undergraduate and graduate students in energy policy, environmental studies, science and technology studies, economics and other related courses.

## ENERGY IN THE 21ST CENTURY (2nd Edition)

by **John R Fanchi** (*Texas Christian University, USA*)

Energy may be the most important factor that will influence the shape of society in the 21st century. The cost and availability of energy significantly impacts our quality of life, the health of national economies, the relationships between nations, and the stability of our environment. What kind of energy do we want to use in our future? Will there be enough? What will be the consequences of our decisions? Everyone has a stake in the answers to these questions and the decisions that are being made to provide energy.

*Energy in the 21st Century*, in its second edition, examines the energy sources that play a vital role in society today, as well as those that may be the primary energy sources of tomorrow. From our reliance on fossil fuels to the quest for energy independence, and the environmental issues that follow each decision, this book delves into the most prominent energy issues of our time. Armed with this information, the reader can think critically about the direction they want this world to take.

**Readership:** Undergraduates and above, general readers, energy industry professionals, utility industry professionals and environmentalists.

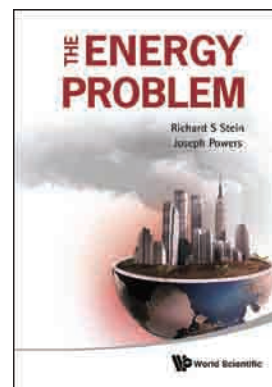
## THE ENERGY PROBLEM

by **Richard S Stein** (*University of Massachusetts, Amherst, USA*) &  
**Joseph Powers** (*United Technologies Corporation, Stratford, USA*)

Most scientists now believe that carbon dioxide concentrations in the atmosphere are rapidly increasing, and that emissions from the burning of fossil fuels is a principal cause. Thus, it is probable that this will affect the climate and lead to global warming.

This book familiarizes the non-specialist with alternative sources of energy, pointing out their advantages and disadvantages. The appropriate principles of physics and chemistry involved in each alternative will be presented in an easily digestible manner. The book seeks to better inform the public about specific actions that need to be taken in order to better combat energy problems, and reduce climate change.

**Readership:** Undergraduate/graduate students, academia, researchers and the general public interested in environmental issues and energy conservation.



**Rights Information:**  
Non-English (**except Japanese**) language rights available.

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**Hardcover: 208pp**

**Pub. date: Mar 2011**

**978-981-4340-31-1**

**US\$38 / £25**

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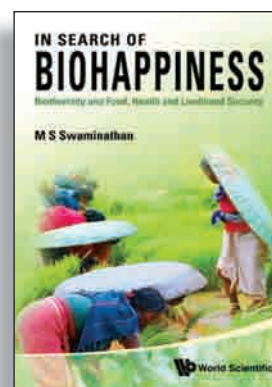
## IN SEARCH OF BIOHAPPINESS

Biodiversity and Food, Health and Livelihood Security

by **M S Swaminathan** (*M S Swaminathan Research Foundation, India*)

This book describes how an era of biohappiness, based on the conservation and sustainable and equitable use of biodiversity, can be launched. It deals with all aspects of conservation such as in situ, ex situ and community conservation, and also covers conservation issues relating to mangroves and other coastal bioresources, whose importance has grown with the emerging possibility of sea-level rise from global warming. The book includes concrete examples of how local tribal families have taken to the establishment of gene, seed, grain and water banks in villages, thus linking conservation, cultivation, consumption and commerce in a mutually-reinforcing manner.

**Readership:** Environmentalists and those in the general public interested in the environment and its various aspects such as sustainability, climate change and conservation.



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Non-English language rights available.

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**Hardcover: 184pp**

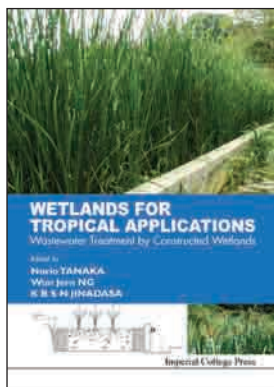
**Pub. date: Mar 2011**

**978-981-4329-32-3**

**US\$88 / £55**

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**Rights Information:**  
Non-English language  
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**Hardcover: 164pp**

**Pub. date: Jun 2011**

**978-1-84816-297-6**

**US\$54 / £36**

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## WETLANDS FOR TROPICAL APPLICATIONS

Wastewater Treatment by Constructed Wetlands

edited by **Norio Tanaka** (*Saitama University, Japan*), **Wun Jern Ng** (*Nanyang Technological University, Singapore*) & **K B S N Jinadasa** (*University of Peradeniya, Sri Lanka*)

This book provides a systematic exposition of the design features of constructed wetlands, and their management (in terms of siting, physical maintenance, and operation). Only very few books (or chapters) have been published on constructed wetlands in tropical conditions and none are current. The selection of plant species, managing their growth and harvesting cycles, and the impact these have on the attenuation of organic and inorganic pollutants, nutrients, and pathogens would be of interest to students and practitioners of the art working under tropical conditions. The potential of constructed wetlands as a low-cost intervention for developing countries in tropical regions that faced water pollution problems, in particular, deserves to be explored systematically.

**Readership:** Researchers, academics and professionals in environmental engineering, environmental management, environmental technology, pollution and waste management.

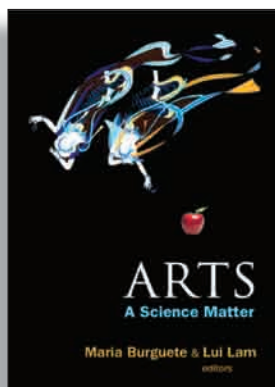
## ARTS: A SCIENCE MATTER

edited by **Maria Burguete** (*Scientific Institute Bento da Rocha Cabral, Portugal*) & **Lui Lam** (*San Jose State University, USA*)

This book treats arts as part of science, from the unified perspective of Science Matters. It contains 17 chapters, with 18 contributors who are prominent humanists, professional artists, or scientists. It consists of three parts: Part I: Philosophy and History of Arts; Part II: Arts in Action; Part III: Understanding Arts. The book is aimed at both research scholars and lay people, and is unique in two important aspects.

It is probably the first and only book that academic professionals and practicing artists contribute to the same book, as equals, on the common theme of creating and understanding arts. (Artists here include Cristina Leiria whose huge Kun lam (Goddess of Mercy) sculpture is an important landmark in Macau, and the famous movie director, Hark Tsui, who is publishing his first ever article on movie-making). Perhaps more importantly, a new understanding of the origin and nature of art is offered for the first time, which is more convincing than all the other hypotheses put forth in the last two thousand years.

**Readership:** Scientists, artists, humanists and lay people.



**Rights Information:**  
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**Hardcover: 416pp**

**Pub. date: Apr 2011**

**978-981-4324-93-9**

**US\$78 / £48**

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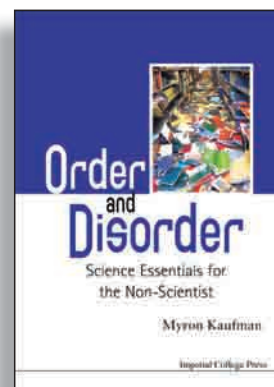
## ORDER AND DISORDER

Science Essentials for the Non-Scientist

by **Myron Kaufman** (*Emory University, USA*)

**O** *Order and Disorder* is a non-mathematical introduction to the most important ideas in science for university students not majoring in a scientific area. The objective is to prepare non-science students for making both life and political decisions involving science and helping them to understand the advances in sciences as covered and reported in the mass media. The book is highly comprehensive in physics and chemistry, and provides the essential background to discuss and gain a better appreciation of selected topics in biological and neurological sciences, as well as astronomy and geology. The topics are integrated with the recurring theme of order and disorder, the organization achieved in the face of the never-ending drive towards disorganization. The book also lends an insight into some considerations of the philosophy of science, as well as the applications of science to health and a variety of other professions. The reading experience is enhanced by the provision of illuminating examples, supplementary reading and a summary of each chapter. New terminologies, that appear here for the first time, are set off in bold italics and annotated in the glossary. Where basic principles are introduced and explained, these are highlighted prominently in bold for ease of reference. Stimulating discussion questions are presented at the end of each chapter, giving readers some food for thought.

**Readership:** Suitable for undergraduates and college students of all levels who are non-science majors; educated members of the general public who are interested in improving their scientific background.



**Rights Information:**

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**Hardcover: 464pp**

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**US\$56 / £66**

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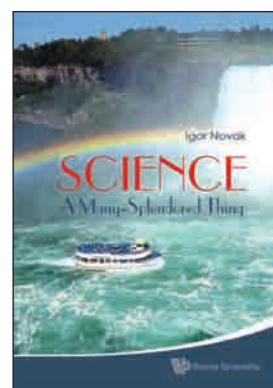
## SCIENCE

A Many-Splendored Thing

by **Igor Novak** (*Charles Sturt University, Australia*)

**T**his book provides the first integrated account of all factors which play a role in making Science what it is today. The book discusses historical, sociological and philosophical aspects of Science emphasizing their interconnectedness. It describes many of the latest developments in scientific practice as well old unsolved problems. The book aims to be explanatory and stimulating rather than comprehensive. The book is an overview of important issues and aims to present these issues in the context of not only Society but of Science itself. One of the important aims of the book is to clarify misconceptions about Science held by general public or by scientists themselves. Science and scientists in this book are presented in their true light, not as stereotyped by the media.

**Readership:** Students and the general public.



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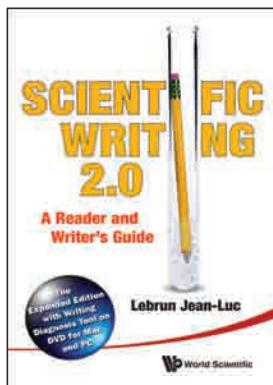
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**US\$42 / £26**

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**Hardcover: 250pp (approx.)**

**Pub. date: Jul 2011**

**978-981-4350-59-4**

**US\$75 / £49**

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**Paperback: 250pp (approx.)**

**Pub. date: Jul 2010**

**978-981-4350-60-0(pbk)**

**US\$32 / £21**

## SCIENTIFIC WRITING 2.0

A Reader and Writer's Guide

by **Jean-Luc Lebrun** (*Trainer of researchers and scientists from A\*STAR Research Institutes, Singapore*)

The book helps scientists write papers for scientific journals. Using the key parts of typical scientific papers (Title, Abstract, Introduction, Visuals, Structure, and Conclusions), it shows through numerous examples, how to achieve the essential qualities required in scientific writing, namely being clear, concise, convincing, fluid, interesting, and organized. To enable the writer to assess whether these parts are well written from a reader's perspective, the book also offers practical metrics in the form of six checklists, and even an original Java application to assist in the evaluation.

The focus of the book is on self- and reader-assisted assessment of the scientific journal article. It is also the first time that a book on scientific writing takes a human factor view of the reading task and the reader scientist. By revealing and addressing the physiological causes that create substantial reading difficulties, namely limited reader memory, attention span, and patience, the book guarantees that writing will gain the much coveted reader-centered quality.

**Readership:** Students, professional scientists and researchers.

**Rights Information:**

Non-English language rights available.

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**Hardcover: 500pp (approx.)**

**Pub. date: Nov 2011**

**978-981-4366-08-3**

**US\$120 / £79**

## BIOLUMINESCENCE

Chemical Principles and Methods

**(Revised Edition)**

by **Osamu Shimomura** (*Nobel Laureate, The Marine Biological Laboratory, USA*)

This book is an authoritative monograph on the recent progresses in the chemistry of bioluminescence. The book provides a comprehensive overview on the past and the latest development in understanding the biochemical mechanisms on some 35 different types of luminous organisms, together with information helpful to students and researchers in an Appendix. It is the first and only book that provides chemical information on all currently known bioluminescence systems. Dr Shimomura is the leading practitioner in the field for the past half century, and is best known for his discovery of the jellyfish photoprotein aequorin and the green fluorescent protein. This book is the bible of bioluminescence, and is "a must read," not only for the students who study bioluminescence but also for those who work in various aspects relating to bioluminescence. This book will be an important source of chemical knowledge on bioluminescence for a long period of time in future.

Fully revised since its publication in 2006, it now incorporates the most recent advances in the subject area. A new section on "Green Fluorescent Protein" has been added at the end of Chapter 4. It contains an extensive reference section.

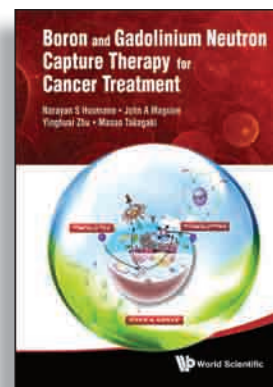
**Readership:** Biologists, chemists, analytical chemists, biomedical chemists; students in biochemistry.

## BORON AND GADOLINIUM NEUTRON CAPTURE THERAPY FOR CANCER TREATMENT

by **Narayan S Hosmane** (Northern Illinois University, USA), **John A Maguire** (Southern Methodist University, USA), **Yinghuai Zhu** (Institute of Chemical and Engineering Sciences (ICES), Singapore) & **Masao Takagaki** (Kyoto University, Japan)

The book focuses on two concurrent experimental therapies in cancer treatment known as boron neutron capture therapy (BNCT) and gadolinium neutron capture therapy (GdNCT) using a variety of boron- and gadolinium-based compounds. Some of the gadolinium compounds serve the dual purpose as being MRI contrast agents and GdNCT agents. The book describes why BNCT & GdNCT were not at the forefront of the clinical trials during the past seven to eight decades since the discovery of neutrons by John Chadwick in 1932 and how the latest development in the synthesis of target boron- and gadolinium-based drugs have turned the area to be the hottest one and worthy of further investigation with the new clinical trials in the USA and elsewhere.

**Readership:** Chemistry/biochemistry/medicinal chemistry students; students learning biology, physics, pharmacy, nursing and medicine; those interested in new cancer treatment therapies.



**Rights Information:**  
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**Hardcover: 300pp (approx.)**

**Pub. date: Dec 2011**

**978-981-4338-67-7**  
**US\$120 / £74**

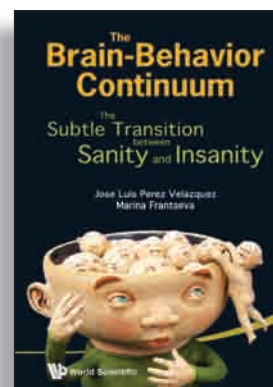
## THE BRAIN-BEHAVIOR CONTINUUM

The Subtle Transition Between Sanity and Insanity

by **Jose Luis Perez Velazquez** (University of Toronto, Canada & The Hospital for Sick Children, Canada) & **Marina Frantseva** (University of Toronto, Canada)

This book is a comprehensive overview of the main current concepts in brain cognitive activities at the global, collective (or network) level, with a focus on transitions between normal neurophysiology and brain pathological states. It provides a unique approach of linking molecular and cellular aspects of normal and pathological brain functioning with their corresponding network, collective and dynamical manifestations that are subsequently extended to behavioral manifestations of healthy and diseased brains. This book introduces a high-level perspective, searching for simplification amongst the structural and functional complexity of nervous systems by consideration of the distributed interactions that underlie the collective behavior of the system. The authors hope that this approach could promote a global comprehensive understanding of high-level laws behind the elementary biological processes in the neuroscientific community, while, perhaps, introducing elements of biological complexities to the mathematical/computational readership. The title of the book refers to the main point of the monograph: that there is a smooth continuum between distinct brain activities resulting in different behaviors, and that, due to the plastic nature of the brain, the behavior can also alter the brain function, thus rendering artificial the boundaries between the brain and its behavior.

**Readership:** Neuroscientists (experimentalists, theoreticians and computational neuroscientists), psychiatrists, neurologists, neurosurgeons, biophysicists, and those interested in the working of the brain and its relation to behavior.



**Rights Information:**  
Non-English language rights available.

**Hardcover: 372pp**

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**US\$98 / £61**

**Rights Information:**  
Non-English language  
rights available.

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**Hardcover: 200pp (approx.)**  
**Pub. date: Oct 2011**  
**978-1-84816-838-1**  
**US\$66 / £44**

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## GENETICALLY MODIFIED CROPS (2nd Edition)

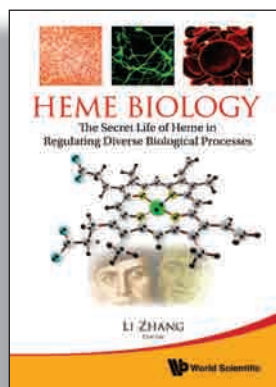
by **Nigel G Halford** (*Rothamsted Research, UK, University of Nottingham, UK & Shanghai Academy of Agricultural Sciences, China*)

Plant molecular biology came to the fore in the early 1980s and there has been tremendous growth in the subject since then. The study of plant genes and genomes and the development of techniques for the incorporation of novel or modified genes into plants eventually led to the commercialisation of genetically modified (GM) crops in the mid-1990s. This was seen as the start of a biotechnological revolution in plant breeding. However, plant biotechnology has become one of the hottest debates of the age and, in Europe at least, one of the greatest challenges that plant scientists have ever faced.

This book covers the history and development of the science and techniques that underpin plant biotechnology. It describes the GM crops that are or have been grown commercially around the world, including failures as well as successes, and the new varieties that are being developed. The safety record of GM crops is reviewed together with the legislation that has been adopted to cover their use. The book also deals with the concerns of consumers, the GM crop debate and the prospects for the technology. In the second edition, sections on current GM crops and future developments in plant biotechnology have been greatly expanded, while those on techniques, legislation and the GM crop debate have also been updated.

The book is a concise, comprehensive and readable study that is accessible to a general readership with a scientific background but also provides useful information for the specialist.

**Readership:** Students and professionals interested in current developments and debates that involve genetically modified crops.



**Rights Information:**  
Non-English language  
rights available.

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**Hardcover: 228pp (approx.)**  
**Pub. date: Aug 2011**  
**978-981-4287-92-0**  
**US\$92 / £61**

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## HEME BIOLOGY

The Secret Life of Heme in Regulating Diverse Biological Processes  
edited by **Zhang Li** (*The University of Texas at Dallas, USA*)

This invaluable book provides the first description of the diverse and fascinating functions of heme in life processes for a broad audience. It begins with an introduction to the intricate chemical properties of heme and the history of early observations of human diseases associated with heme. It then proceeds to describe the versatile roles of heme in controlling diverse molecular and cellular processes germane to human life and disease processes. Finally, an up-to-date review of human diseases associated with heme synthesis and application of heme synthesis in photodynamic therapy in cancer treatment is presented.

*Heme biology* is unified and logical in presentation. It is well suited for students and professionals in life sciences who wish to comprehend the fascinating biology of heme and its usefulness in health and diseases. It may also be used as a reference book for advanced readers and researchers who are interested in heme biology. The explanations in the book are detailed enough to capture the interest of the curious reader, and complete enough to provide the necessary information for researchers to have an in-depth molecular understanding of heme biology and further their studies in this fascinating realm.

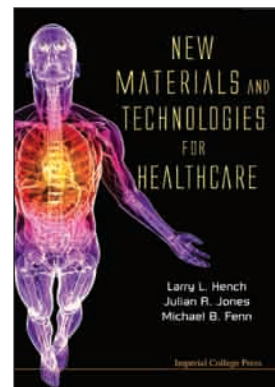
**Readership:** Undergraduate and graduate students in life sciences, advanced readers and researchers in heme biology.

## NEW MATERIALS AND TECHNOLOGIES FOR HEALTHCARE

edited by **Larry Hench** (University of Florida, USA), **Julian Jones** (Imperial College London, UK) & **Michael B Fenn** (University of Florida, USA)

This volume summarizes recent developments in the use of new materials and technologies in healthcare. The emphasis is on new approaches that incorporate bioactive materials and scaffolds with cells in the emerging technologies of tissue engineering and regenerative medicine. The incorporation of nanotechnology, stem cells, and gene control of cells is included in the current research discussed. Clinical applications are described throughout the volume, along with economic and bioethics issues. The chapters are organized into four sections of clinical needs and an overview that summarizes the technologies that provide new approaches to clinical problems. The clinical areas addressed are Skeletal and Skin Repair, Heart and Cardiovascular Repair, Neuronal Repair, and Sensory Repair. The chapters were written by a multidisciplinary group of authors from six universities: the University of Arizona (US), the University of Central Florida (US), Imperial College London (UK), King's College, Guy's Hospital, University of London (UK), University of Florida (US) and Kyoto University (Japan). This book can be used as a reference book or as a textbook for advanced undergraduate or graduate courses in bioengineering, biomaterials or healthcare management.

**Readership:** Undergraduates or graduates in bioengineering, biomaterials and healthcare management, and healthcare professionals.



### Rights Information:

Non-English language rights available.

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**978-1-84816-558-8**

**US\$111 / £76**

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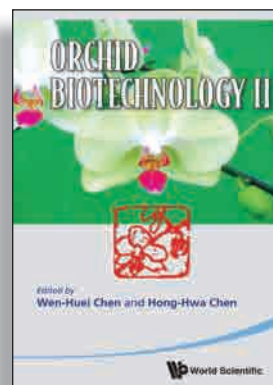
## ORCHID BIOTECHNOLOGY II

edited by **Wen-Huei Chen & Hong-Hwa Chen** (National Cheng Kung University, Taiwan)

*Orchid Biotechnology II* presents a series of recent works on both basic and applied researches in biotechnology progress for *Phalaenopsis* and *Oncidium* orchids. These include the development of flower, ovule, gynostemium and perianth, the discovery of new orchid-infecting viruses and virus movement, secondary metabolites, technology of DNA endoduplication and genetic transformation, growth regulation by micronutrition and orchid mycorrhiza, and plant growth substances for flowering.

The diversity and specialization in orchid floral morphology have fascinated botanists and collectors for centuries. The orchid industry has been growing substantially in the past ten years worldwide. This book focuses on the recent advances in the research of orchid biotechnology from the past ten years in Taiwan. To advance the orchid industry, enhancement of basic research as well as advanced biotechnology will provide a good platform to improve flower quality and breeding of new varieties.

**Readership:** Graduate students and researchers in crop science, plant physiology, molecular biology, microbiology/virology, biochemistry, genetics/genomics, tissue engineering, biotechnology, botany/plant biology, natural product research.



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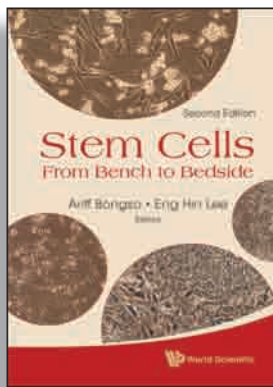
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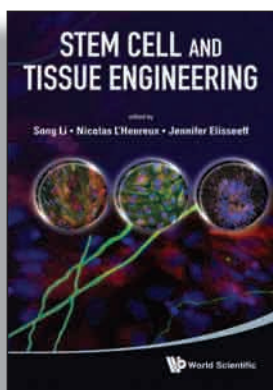
**Hardcover: 720pp**

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**US\$145 / £94**

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## STEM CELLS

From Bench to Bedside

### (Second Edition)

edited by **Ariff Bongso & Eng Hin Lee** (*National University of Singapore, Singapore*)

**S**tem cell biology has drawn tremendous interest in recent years as it promises cures for a variety of incurable diseases. This book deals with the basic and clinical aspects of stem cell research and involves work on the full spectrum of stem cells isolated today. It also covers the conversion of stem cell types into a variety of useful tissues which may be used in the future for transplantation therapy. It is thus aimed at undergraduates, postgraduates, scientists, embryologists, doctors, tissue engineers and anyone who wishes to gain some insight into stem cell biology.

This book is important as it is comprehensive and covers all aspects of stem cell biology, from basic research to clinical applications. It will have 33 chapters written by renowned stem cell scientists worldwide. It will be up-to-date and all the chapters include self-explanatory figures, color photographs, graphics and tables. It will be easy to read and give the reader a complete understanding and state of the art of the exciting science and its applications.

**Readership:** Graduate students, upper level undergraduate students and researchers in cell biology, biochemistry, genetics, developmental biology, and animal science; stem cell researchers, medical doctors, veterinarians and dentists

## STEM CELL AND TISSUE ENGINEERING

edited by **Song Li** (*University of California, Berkeley, USA*), **Nicolas L'Heureux**

(*CytoGraft Tissue Engineering, USA*) & **Jennifer Elisseeff** (*Johns Hopkins University, USA*)

**T**issue engineering integrates knowledge and tools from biological sciences and engineering for tissue regeneration. A challenge for tissue engineering is to identify appropriate cell sources. The recent advancement of stem cell biology provides enormous opportunities to engineer stem cells for tissue engineering. The impact of stem cell technology on tissue engineering will be revolutionary. This book covers state-of-the-art knowledge on the potential of stem cells for the regeneration of a wide range of tissues and organs and the technologies for studying and engineering stem cells. It serves as a valuable reference book for researchers and students.

**Readership:** Life science scientists; biomedical researchers; cell biologists; academics, postgraduate students and advanced undergraduate students in cell biology, biochemistry and genetics; surgeons; clinicians; biotechnology and pharmaceutical industry professionals.

## STRUCTURAL ASPECTS OF PROTEIN SYNTHESIS (2nd Edition)

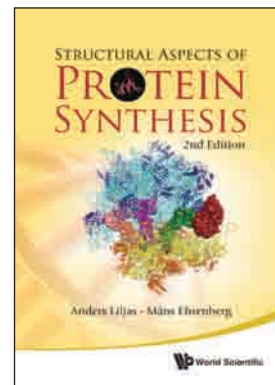
by **Anders Liljas** (Lund University, Sweden) & **Måns Ehrenberg** (Uppsala University, Sweden)

This highly illustrated book provides an up-to-date description of the structure and function of the translation system including ribosomes, tRNAs, translation factors, antibiotics and aminoacyl-tRNA synthetases.

Research on translation is undergoing rapid changes and is receiving significant attention as evidenced by the Nobel Prize in Chemistry 2009. The structural research by crystallography and cryo-EM forms part of an interactive framework that involves biochemistry and molecular computation. The book provides a comprehensive overview of translation in light of the structural results. It is a valuable resource for scientists in this and related fields, as well as for students taking courses with a focus on translation.

There is no other book in this field currently except the previous edition of this book. The authors have for a long time worked in the field of structure and function of the translation system.

**Readership:** Upper level undergraduates and graduate students with an interest in protein synthesis; researchers in cell and molecular biology, biochemistry and biophysics who need to get an overview of translation.



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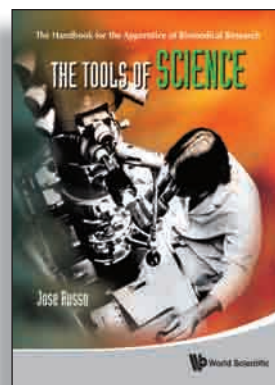
## THE TOOLS OF SCIENCE

The Handbook for the Apprentice of Biomedical Research

by **Jose Russo** (Fox Chase Cancer Center, USA)

This book aims to provide useful tips for the understanding of scientific research processes and practical advice for people engaged in this field. It is a reflection of the author's more than 40 years of experience in medical and cancer research, and is written in a colloquial style to reach not only the young audience who are considering devoting their lives to biomedical research, but also to those who are already engaged in this field. The author emphasizes the unique traits and qualifications required for performing scientific research and also describes the different modalities which can be performed in our actual scientific environment. There are numerous practical advices in this book, such as guidelines on writing a grant proposal and the first peer-reviewed manuscript, the selection criteria of the training laboratory and mentors, as well as experimental record. The author also provides his insight on the personal inner drive and motivation critical for conducting scientific research, as well as the importance of working on a problem without losing the human perspective of this specific and unique human endeavor.

**Readership:** College students, undergraduates or graduates interested in pursuing a career in biomedical research, or those already involved in this field.



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**Hardcover: 228pp**

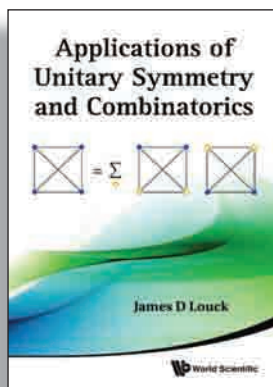
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**US\$52 / £34**

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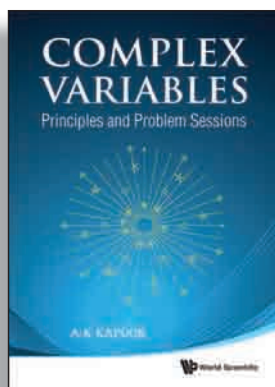
**Hardcover: 380pp**

**Pub. date: May 2011**

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**Hardcover: 524pp**

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**US\$98 / £61**

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**Paperback: 524pp**

**978-981-4313-53-7(pbk)**

**US\$58 / £36**

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## APPLICATIONS OF UNITARY SYMMETRY AND COMBINATORICS

by **James D Louck** (*Los Alamos National Laboratory Fellow, New Mexico, Santa Fe, USA*)

This monograph is a synthesis of the theory of the pairwise coupling of the angular momenta of arbitrarily many independent systems to the total angular momentum in which the universal role of doubly stochastic matrices and their quantum-mechanical probabilistic interpretation is a major theme. A uniform viewpoint is presented based on the structure of binary trees. This includes a systematic method for the evaluation of all  $3n-j$  coefficients and their relationship to cubic graphs. A number of topical subjects that emerge naturally are also developed, such as the algebra of permutation matrices, the properties of magic squares and an associated generalized Regge form, the Zeilberger counting formula for alternating sign matrices, and the Heisenberg ring problem, viewed as a composite system in which the total angular momentum is conserved.

The readership is intended to be advanced graduate students and researchers interested in learning about the relationship between unitary symmetry and combinatorics and challenging unsolved problems. The many examples serve partially as exercises, but this monograph is not a textbook. It is hoped that the topics presented promote further and more rigorous developments that lead to a deeper understanding of the angular momentum properties of complex systems viewed as composite wholes.

**Readership:** Graduate students and researchers in physics and mathematics who wish to learn about the relationships between symmetry and combinatorics.

## COMPLEX VARIABLES

Principles and Problem Sessions

by **A K Kapoor** (*University of Hyderabad, India*)

This textbook introduces the theory of complex variables at undergraduate level. A good collection of problems is provided in the second part of the book. The book is written in a user-friendly style that presents important fundamentals a beginner needs to master the technical details of the subject. The organization of problems into focused sets is an important feature of the book and the teachers may adopt this book for a course on complex variables and for mining problems.

**Readership:** Undergraduates, graduates and academics in mathematics and physics.

## EXPECT THE UNEXPECTED

A First Course in Biostatistics

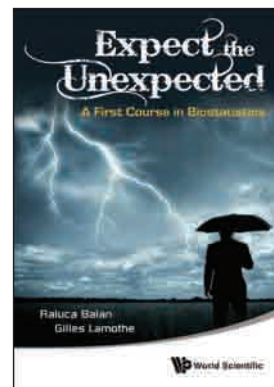
by **Raluca Balan & Gilles Lamothe** (*University of Ottawa, Canada*)

Statistical reasoning and modeling are of critical importance to modern biology. This textbook introduces fundamental concepts from probability and statistics which will pave the way for the student of biology to become a well-rounded scientist. No previous study of probability or statistics is assumed. Calculus topics are not used extensively in this book, though some integration and differentiation are expected. The calculus prerequisite is primarily intended to assure a certain level of mathematical maturity.

This book puts emphasis on examples, which are presented to motivate the theory. The presentation style is concise and self-contained, briefly including the mathematical elements that are needed for studying probability and statistics. The examples are relevant to students in the life sciences with interests in genetics, biology, ecology, health, etc.

We believe that aspects of probability theory are of biological interest and that probability underlies the theory of inferential statistics. Thus, we place an equal emphasis on probability and statistics which are both essential for solving and understanding many types of biological problems.

**Readership:** Undergraduates studying probability and statistics, especially in the life and natural sciences.



### Rights Information:

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**978-981-4291-32-3**

**US\$60 / £39**

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## GEOMETRIC MECHANICS Part I: Dynamics and Symmetry (2nd Edition)

by **Darryl D Holm** (*Imperial College London, UK*)

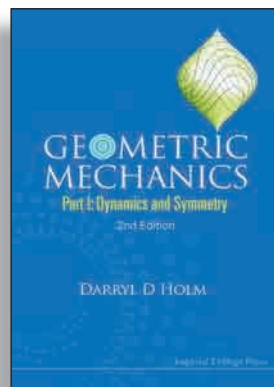
This textbook introduces the tools and language of modern geometric mechanics to advanced undergraduates and beginning graduate students in mathematics, physics and engineering. It treats the fundamental problems of dynamical systems from the viewpoint of Lie group symmetry in variational principles. The only prerequisites are linear algebra, calculus and some familiarity with Hamilton's principle and canonical Poisson brackets in classical mechanics at the beginning undergraduate level.

The ideas and concepts of geometric mechanics are explained in the context of explicit examples. Through these examples, the student develops skills in performing computational manipulations, starting from Fermat's principle, working through the theory of differential forms on manifolds and transferring these ideas to the applications of reduction by symmetry to reveal Lie–Poisson Hamiltonian formulations and momentum maps in physical applications.

The many Exercises and Worked Answers in the text enable the student to grasp the essential aspects of the subject. In addition, the modern language and application of differential forms is explained in the context of geometric mechanics, so that the importance of Lie derivatives and their flows is clear. All theorems are stated and proved explicitly.

The organisation of the first edition has been preserved in the second edition. However, the substance of the text has been rewritten throughout to improve the flow and to enrich the development of the material. In particular, the role of Noether's theorem about the implications of Lie group symmetries for conservation laws of dynamical systems has been emphasised throughout, with many applications.

**Readership:** Advanced undergraduate and graduate students in mathematics, physics and engineering; non-experts interested in geometric mechanics, dynamics and symmetry.



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**Hardcover: 464pp (approx.)**

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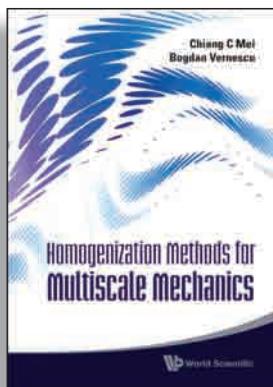
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**Paperback: 464pp (approx.)**

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**US\$48 / £31**

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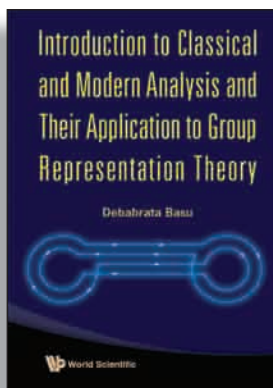
**Hardcover: 348pp**

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**Hardcover: 388pp**

**Pub. date: Feb 2011**

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**US\$85 / £56**

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**Paperback: 388pp**

**978-981-4273-30-5 (pbk)**

**US\$58 / £38**

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## HOMOGENIZATION METHODS FOR MULTISCALE MECHANICS

by **Chiang C Mei** (*Massachusetts Institute of Technology, USA*) & **Bogdan Vernescu** (*Worcester Polytechnic Institute, USA*)

In many physical problems several scales are present in space or time, caused by inhomogeneity of the medium or complexity of the mechanical process. A fundamental approach is to first construct micro-scale models, and then deduce the macro-scale laws and the constitutive relations by properly averaging over the micro-scale. The perturbation method of multiple scales can be used to derive averaged equations for a much larger scale from considerations of the small scales. In the mechanics of multiscale media, the analytical scheme of upscaling is known as the Theory of Homogenization.

The authors share the view that the general methods of homogenization should be more widely understood and practiced by applied scientists and engineers. Hence this book is aimed at providing a less abstract treatment of the theory of homogenization for treating inhomogeneous media, and at illustrating its broad range of applications. Each chapter deals with a different class of physical problems. To tackle a new problem, the approach of first discussing the physically relevant scales, then identifying the small parameters and their roles in the normalized governing equations is adopted. The details of asymptotic analysis are only explained afterwards.

**Readership:** Graduate students and researchers in applied mathematics and engineering science.

## INTRODUCTION TO CLASSICAL AND MODERN ANALYSIS AND THEIR APPLICATION TO GROUP REPRESENTATION THEORY

by **Debabrata Basu** (*Indian Institute of Technology, India*)

This book is suitable for use in any graduate course on analytical methods and their application to representation theory. Each concept is developed with special emphasis on lucidity and clarity. The book also shows the direct link of Cauchy–Pochhammer theory with the Hadamard–Reisz–Schwartz–Gel’fand *et al.* regularization. The flaw in earlier works on the Plancherel formula for the universal covering group of  $SL(2, R)$  is pointed out and rectified. This topic appears here for the first time in the correct form.

Existing treatises are essentially *magnum opus* of the experts, intended for other experts in the field. This book, on the other hand, is unique insofar as every chapter deals with topics in a way that differs remarkably from traditional treatment. For example, Chapter 3 presents the Cauchy–Pochhammer theory of gamma, beta and zeta function in a form which has not been presented so far in any treatise of classical analysis.

**Readership:** Academics, research scholars and graduate students of mathematical physics, mathematics and theoretical physics.

## LESSON STUDY

Challenges in Mathematics Education

edited by **Maitree Inprasitha** (*Khon Kaen University, Thailand*), **Masami Isoda** (*University of Tsukuba, Japan*), **Ban-Har Yeap** (*National Institute of Education, Singapore*) & **Patsy Wang-Iverson** (*The Gabriella and Paul Rosenbaum Foundation, USA*)

Classroom Innovations through Lesson Study is an APEC EDNET (Asia-Pacific Economic Cooperation Education Network) project that aims to improve the quality of education in the area of mathematics. This book includes challenges of lesson study in the world, for example, in Japan and Singapore.

Lesson study is one of the best ways to improve the quality of teaching. It is the model approach for improvement of teacher education in the world, and mathematics is the most appropriate subject for sharing the results of lesson study. This book focuses on teacher education and mathematics education, and on curriculum implementation and reforms.

**Readership:** Mathematics educators of teacher training colleges, mathematics teachers, prospective teachers (elementary and secondary school) and undergraduate students in mathematics.

## MAKING MATHEMATICS PRACTICAL

An Approach to Problem Solving

by **Tin Lam Toh**, **Khiok Seng Quek**, **Yew Hoong Leong**, **Jaguthsing Dindyal** & **Eng Guan Tay** (*Nanyang Technological University, Singapore*)

This book is the first of its kind, as it includes both mathematics content and pedagogy. It is a professional instructional manual on how mathematical problem solving curriculum can be implemented in the classrooms. The book develops from the theoretical work of Polya and Schoenfeld, and explicates how these can be translated to the actual implementation in schools. It represents the work of a group of researchers from the Singapore National Institute of Education, after experimenting with it in the Singapore school classrooms.

This book includes a set of scheme of work, lesson plans and a choice of mathematics problems that teachers can actually use in teaching problem solving. Certain pedagogical considerations are developed and suggested in this book. In addition, the book includes an assessment framework on how mathematical problem solving can be assessed.

**Readership:** Mathematics educators who value the processes (in addition to the product) of mathematical problem solving.

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**Hardcover: 300pp (approx.)**

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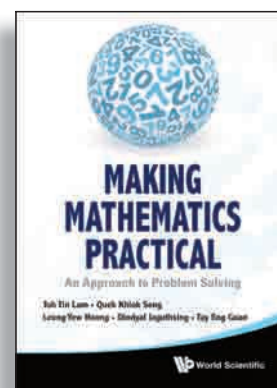
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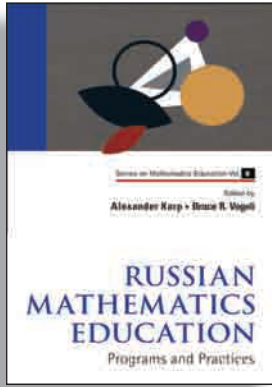
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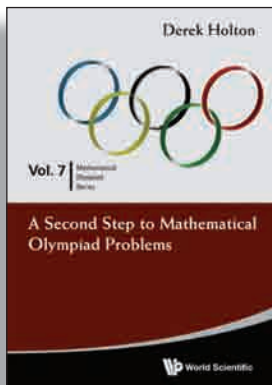
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**978-981-4327-87-9(pbk)**

**US\$38 / £24**

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## RUSSIAN MATHEMATICS EDUCATION

Programs and Practices

edited by **Alexander Karp** (Columbia University, USA) &  
**Bruce R Vogeli** (Columbia University, USA)

This anthology, consisting of two volumes, is intended to equip background researchers, practitioners and students of international mathematics education with intimate knowledge of mathematics education in Russia.

Volume I, entitled *Russian Mathematics Education: History and World Significance*, consists of several chapters written by distinguished authorities from Russia, the United States and other nations. It examines the history of mathematics education in Russia and its relevance to mathematics education throughout the world. The second volume, entitled *Russian Mathematics Education: Programs and Practices* will examine specific Russian programs in mathematics, their impact and methodological innovations. Although Russian mathematics education is highly respected for its achievements and was once very influential internationally, it has never been explored in depth. This publication does just that.

**Readership:** Mathematics education scholars and professors, teachers and investigators concerned with Russian mathematics education and its achievements.

## A SECOND STEP TO MATHEMATICAL OLYMPIAD PROBLEMS

by **Derek Holton** (University of Otago, New Zealand & University of Melbourne, Australia)

The International Mathematical Olympiad (IMO) is an annual international mathematics competition held for pre-collegiate students. It is also the oldest of the international science olympiads, and competition for places is particularly fierce. This book is an amalgamation of the booklets originally produced to guide students intending to contend for placement on their country's IMO team. See also *A First Step to Mathematical Olympiad Problems* which was published in 2009.

The material contained in this book provides an introduction to the main mathematical topics covered in the IMO, which are: Combinatorics, Geometry and Number Theory. In addition, there is a special emphasis on how to approach unseen questions in Mathematics, and model the writing of proofs. Full answers are given to all questions.

Though *A Second Step to Mathematical Olympiad Problems* is written from the perspective of a mathematician, it is written in a way that makes it easily comprehensible to adolescents. This book is also a must-read for coaches and instructors of mathematical competitions.

**Readership:** School students keen to learn more of mathematics and specifically mathematics related to the IMO; coaches and instructors of mathematical competitions.

## SELECTED PROBLEMS OF THE VIETNAMESE MATHEMATICAL OLYMPIAD (1962–2009)

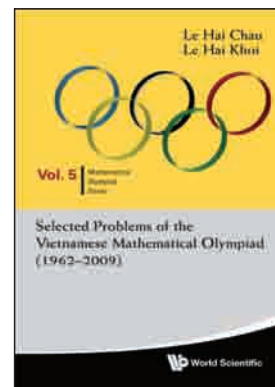
by **Hai Chau Le** (Ministry of Education and Training, Vietnam) &  
**Hai Khoi Le** (Nanyang Technological University, Singapore)

Vietnam has actively organized the National Competition in Mathematics and since 1962, the Vietnamese Mathematical Olympiad (VMO). On the global stage, Vietnam has also competed in the International Mathematical Olympiad (IMO) since 1974 and constantly emerged as one of the top ten.

To inspire and further challenge readers, we have gathered in this book problems of various degrees of difficulty of the VMO from 1962 to 2009.

The book is highly useful for high school students and teachers, coaches and instructors preparing for mathematical olympiads, as well as non-experts simply interested in having the edge over their opponents in mathematical competitions.

**Readership:** High school students and teachers, coaches and instructors of mathematical olympiads, non-experts interested in mathematical competitions.



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**US\$39 / £24**

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## THE SHAPE OF ALGEBRA IN THE MIRRORS OF MATHEMATICS

A Visual, Computer-Aided Exploration of Elementary Algebra and Beyond

(With CD-ROM)



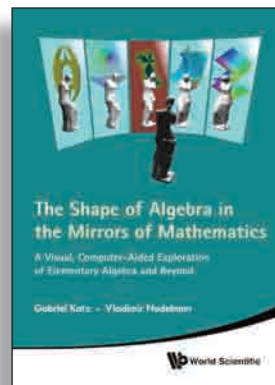
by **Gabriel Katz** (Massachusetts Institute of Technology, USA) &  
**Vladimir Nodelman** (Holon Institute of Technology, Israel)

*The Shape of Algebra in the Mirrors of Mathematics* is a unique text aiming to explain some elements of modern mathematics and to show its flavor and unity. It is neither a standard textbook nor a tour of algebra for a casual reader. Rather, it is an attempt to share authors' mathematical experiences and philosophy with readers who have more than a passing interest in mathematics, but only a traditional exposure to High School Algebra and some elements of Calculus. The book gives the readers a sense of visual nature of significant part of mathematics.

An outline of the topics that are discussed may read like a list of graduate courses: Abstract Algebra, Topology, Singularity Theory, Complex Analysis, and Number Theory. However, they are presented from an intuitive perspective that uses primarily visual models and concepts. Although the main subject is polynomials and polynomial equations, the true story line is the *interplay* between basic ideas from algebra, geometry, analysis and topology.

The book aims to attract students of all ages, particularly including professional mathematicians interested in pedagogy. In part, *The Shape of Algebra* is directed at secondary and college teachers and students who want to expand their horizons in the field and to find both a fresh presentation of familiar concepts and, perhaps, some unexpected results. Many of the topics and demos are self-contained and can be used individually to enhance traditional courses. Several of the ideas and materials developed in the book have been tested in high school and college classrooms.

**Readership:** Undergraduates, school teachers, college professors interested in algebra and its geometric approach.



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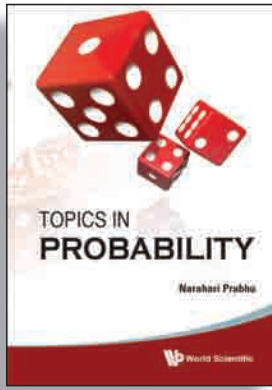
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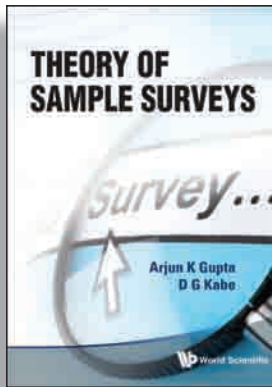
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**Hardcover: 236pp**

**Pub. date: Mar 2011**

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**US\$58 / £36**

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## TOPICS IN PROBABILITY

by **Narahari Prabhu** (*Cornell University, USA*)

Recent research in probability has been concerned with applications such as data mining and finance models. Some aspects of the foundations of probability theory have receded into the background. Yet, these aspects are very important and have to be brought back into prominence.

**Readership:** Graduate students and researchers in probability and applied mathematics.

## THEORY OF SAMPLE SURVEYS

by **Arjun K Gupta** (*Bowling Green State University, USA*) &  
**D G Kabe** (*St Mary's University, Canada*)

Sample surveys is the most important branch of statistics. Without sample surveys there is no data, and without data there is no statistics. This book is the culmination of the lecture notes developed by the authors. The approach is theoretical in the sense that it gives mathematical proofs of the results in sample surveys. Intended as a textbook for a one-semester course for undergraduate seniors or first-year graduate students, a prerequisite basic knowledge of algebra, calculus, and statistical theory is required to master the techniques described in this book.

**Readership:** Undergraduate and graduate students in statistics.

## A WALK THROUGH COMBINATORICS

An Introduction to Enumeration and Graph Theory

### (Third Edition)

by **Miklós Bóna** (*University of Florida, USA*)

This is a textbook for an introductory combinatorics course lasting one or two semesters. An extensive list of problems, ranging from routine exercises to research questions, is included. In each section, there are also exercises that contain material not explicitly discussed in the preceding text, so as to provide instructors with extra choices if they want to shift the emphasis of their course.

Just as with the first two editions, the new edition walks the reader through the classic parts of combinatorial enumeration and graph theory, while also discussing some recent progress in the area: on the one hand, providing material that will help students learn the basic techniques, and on the other hand, showing that some questions at the forefront of research are comprehensible and accessible to the talented and hardworking undergraduate.

As the goal of the book is to encourage students to learn more combinatorics, every effort has been made to provide them with a not only useful, but also enjoyable and engaging reading.

**Readership:** Upper level undergraduates and graduate students in the field of combinatorics and graph theory.



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**978-981-4335-23-2**

**US\$110 / £72**

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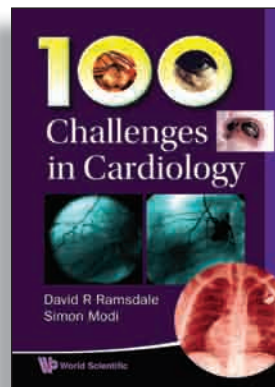
## 100 CHALLENGES IN CARDIOLOGY

by **David R Ramsdale** (*The Liverpool Heart and Chest Hospital, Liverpool, UK*) & **Simon Modi** (*The Liverpool Heart and Chest Hospital, Liverpool, UK*)

**100** *Challenges in Cardiology* comprises one hundred well-illustrated clinical scenarios covering a wide spectrum of cardiology cases — hypertension, stable and unstable angina, non-ST elevation and ST-elevation myocardial infarction, coronary intervention, percutaneous aortic and mitral valve treatment, ASD closure, complications of MI, valvular heart disease, pericardial disease, cardiomyopathies, HOCM ablation, haemodynamic assessment in catheterisation laboratory, aortic dissection, infective endocarditis and its complications. Cardiac pacing, arrhythmia diagnosis and management, electrophysiology, CT and MRI scans, and transthoracic and transoesophageal echocardiography images are also included for interpretation.

This book will serve as an ideal study aid for medical students and junior doctors who are preparing for their clinical examinations in medicine as it presents the relevant investigations corresponding to each case in an interesting and easy-to-read Q&A format concerning diagnosis and management. This text will also be particularly useful for clinical fellows and specialist senior house officers and registrars who are training in cardiology and its subspecialties. By solving the problems posed by these challenging cases, the reader will gain additional knowledge as well as extra practice in diagnosis and treatment strategies in this exciting specialty of cardiology.

**Readership:** Medical students and junior doctors who are preparing for clinical examinations; clinical fellows, specialist senior house officers and registrars who are training in cardiology; general physicians; general practitioners; ancillary and technical staff in cardiology.



**Rights Information:**

Non-English (**except Turkish**) language rights available.

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**Paperback: 296pp**

**Pub. date: Nov 2010**

**978-981-4307-14-7(pbk)**

**US\$68 / £42**

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**Rights Information:**  
Non-English language  
rights available.

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**Hardcover: 360pp**

**Pub. date: Dec 2011**

**978-981-4366-65-6**

**US\$128 / £84**

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## ATLAS OF GASTROINTESTINAL ENDOMICROSCOPY

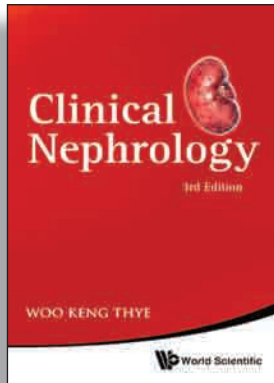
by **Yan-Qing Li** (Shandong University, China), **Khek-Yu Ho** (National University Hospital, Singapore), **Xiu-Li Zuo** & **Cheng-Jun Zhou** (Shandong University, China)

This book covers all one needs to know about the utility of endomicroscopy in the diagnosis and management of gastrointestinal diseases. It provides a comprehensive description of the latest in diagnostic criteria and advances in the basic science pertaining to endomicroscopy of the gastrointestinal system. Each chapter introduces the key histologic, endoscopic, and endomicroscopic features of common gastrointestinal conditions, with generous illustration using typical images. The book will provide the practicing physicians with the principles of practice, and procedural techniques of endomicroscopy, as well as demonstrate the bench-to bedside translational potential of endomicroscopy in helping endoscopists manage their patients' gastrointestinal conditions.

This book fills an enormous gap in providing a much needed atlas in GI endomicroscopic diagnosis. Readers can learn the diagnostic criteria of various gastrointestinal conditions as illustrated by high quality endoscopic, endomicroscopic and histology images.

It contains the most extensive review of currently published studies of endomicroscopy in gastrointestinal conditions. It has numerous high quality endomicroscopic images along with high definition endoscopy and histology images illustrating the common gastrointestinal diseases. It will provide a platform for standardizing endomicroscopic practice and learning.

**Readership:** gastroenterologists, surgeons and general practitioners.



**Rights Information:**  
Non-English language  
rights available.

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**Paperback: 668pp**

**Pub. date: Mar 2011**

**978-981-4340-80-9(pbk)**

**US\$68 / £44**

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## CLINICAL NEPHROLOGY (3rd Edition)

by **Keng Thye Woo** (Singapore General Hospital, Singapore & National University of Singapore)

This comprehensive textbook provides a broad review of kidney diseases with regards to symptoms, investigation and treatment. It deals with a variety of clinical entities like glomerulonephritis, kidney stones, hypertension, urinary infection and renal failure. The in-depth chapters deal with dialysis and kidney transplantation as well as renal therapeutics which are currently practiced — the latest combed from a broad range of medical journals, distilled and combined with the author's own experience and practice in nephrology since 1975 when he first embarked on his career as a kidney specialist.

This third edition has 7 new chapters reflecting the latest changes in nephrological practice, totalling 35 chapters as compared to the last edition of 27 chapters.

The new chapters include recent clinical trials, aging kidneys, cardiorenal syndrome, the geography and evolution of glomerulonephritis, IgA nephritis — a distinct Glomerular disease, acute poisoning and research in kidney diseases. These updated topics will allow the reader to keep abreast of the latest trends in nephrology, with abstract/summaries included for easy reference to the original text/articles.

Written in a clear and concise style, this invaluable textbook serves as a practical guide for medical students, doctors, nurses and other medical and paramedical personnel in kidney diseases.

**Readership:** Medical undergraduates, doctors, and nurses in nephrology.

## CLINICAL EXAMINATION

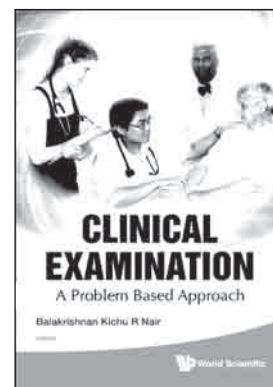
A Problem Based Approach

edited by **Balakrishnan Kichu R Nair** (*University of Newcastle & Hunter New England Health, Australia*)

Contrary to conventional clinical skill textbooks written in a routine, system based approach, "Clinical Examination: A Problem Based Approach" breaks that mould by presenting clinical cases in a problem solving manner. The book is composed of in-depth dissections of case scenarios and their appropriate investigations. Written by experts from Australia, New Zealand, US and the UK, this book brings an international perspective to a wide variety of specialties including, gastroenterology, neurology, rheumatology, respiratory and the cardiovascular system. Another unique feature of the book is the chapters on examining the older patient, the joints and the vascular system. This publication is a must-have for all medical undergraduates and postgraduates.

The author is a distinguished clinician and educator. He is the recipient of the Order of Australia (AM) 2009 for "service to medicine and to medical education through the development of undergraduate and professional development programs".

**Readership:** Medical undergraduates and postgraduates, and internal medicine, MRCP, FRACP and Board Examination trainees.



**Rights Information:**

Non-English language rights available.

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**Hardcover: 376pp**

**Pub. date: Mar 2011**

**978-981-4273-91-6**

**US\$79 / £51**

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## THE COMPLETE GUIDE TO COMPLEMENTARY THERAPIES IN CANCER CARE

Essential Information for Patients, Survivors and Health Professionals

by **Barrie R Cassileth** (*Memorial Sloan-Kettering Cancer Center, USA*)

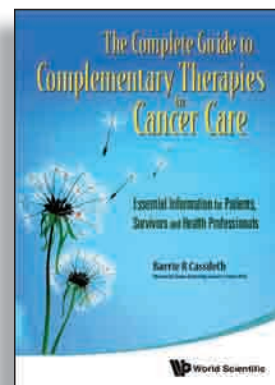
With recent clinical advances, millions of people survive many years after a cancer diagnosis. And while their physicians deliver conventional, evidence-based therapies to treat the cancer, sometimes the cancer patient and his or her symptoms are not treated with equal skill.

To manage their physical and emotional symptoms and promote health and well-being, most cancer patients and survivors use complementary therapies: Naturopathy, Ayurveda, herbalism, homeopathy, hypnosis, yoga, acupuncture, music therapy, macrobiotics, chelation therapy, colonics, hydrotherapy and many, many more. But ... are they safe? Are they effective? What problems do they address? What are the risks? When can they help?

This unique and comprehensive book guides the way through the often confusing maze of complementary and alternative therapies promoted to cancer patients and survivors. The functions, benefits, backgrounds and risks are clearly presented. Learning when, if and how to use them provides medical professionals, cancer patients and survivors with the information they need to better control the symptoms and side effects of cancer and its treatment. Unfortunately, using some of these therapies without this expert guidance can lead to medical complications, or worse.

*The Complete Guide to Complementary Therapies in Cancer Care* is an invaluable resource in making educated health care decisions for managing life during and after cancer. Through the wise and informed use of these approaches, cancer patients — whether just-diagnosed, during treatment or throughout Survivorship are better able to manage the physical and emotional stresses that accompany cancer, leading to symptom control and improved quality of life.

**Readership:** Cancer patients, their family members, and the professionals who provide cancer care.



**Rights Information:**

Non-English language rights available.

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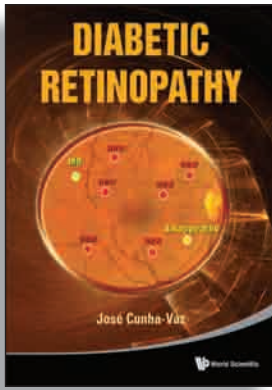
**Hardcover: 350pp (approx.)**

**Pub. date: Jul 2011**

**978-981-4335-16-4 (pbk)**

**US\$39 / £24**

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**Rights Information:**

Non-English language rights available.

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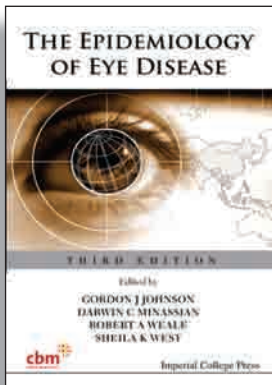
**Hardcover: 348pp**

**Pub. date: Dec 2010**

**978-981-4304-43-6**

**US\$122 / £84**

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**Rights Information:**

Non-English language rights available.

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**Hardcover: 500pp (approx.)**

**Pub. date: Jul 2011**

**978-1-84816-625-7**

**US\$138 / £86**

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## DIABETIC RETINOPATHY

by **José Cunha-Vaz** (*University of Coimbra, Portugal*)

This book addresses diabetic retinopathy, an eye disease that remains one of the main causes of vision loss if not diagnosed and managed properly. It aims to cover the entire spectrum of the disease by describing its clinical identification and characterization, pathophysiology, epidemiology, and medical and surgical management. *Diabetic Retinopathy* also offers a complete overview of the present understanding of diabetic retinopathy, covering current practice but also including original contributions that offer novel perspectives for looking at and addressing this disease.

The author has dedicated his lifetime to the study of diabetic retinal disease and has organized this book around his personal experience but at the same time giving the necessary information for updated management of diabetic retinopathy. *Diabetic Retinopathy* will be especially useful for postgraduate students in diabetology, retina specialists and researchers.

**Readership:** Ophthalmologists.

## THE EPIDEMIOLOGY OF EYE DISEASE (3rd Edition)

edited by **Gordon J Johnson** (*London School of Hygiene & Tropical Medicine, UK*), **Darwin C Minassian** (*University College London, UK*), **Robert A Weale** (*King's College London, UK*) & **Sheila K West** (*Johns Hopkins University, Baltimore, USA*)

This unique book is a comprehensive coverage of the epidemiology of the world's major blinding eye diseases, written by internationally acclaimed experts in each field. Edited by world-renowned epidemiologists and ophthalmologists, the chapters on each leading cause of blindness describe its biology, epidemiology, risk factors, clinical trials, possibilities for prevention, and new research avenues. New chapters include Research Synthesis, Epidemiology of Dry Eye Disease, and Epidemiology of Uveitis, as well as programme issues for reaching the goal of eliminating avoidable blindness by 2020.

This book is essential for any eye care practitioner interested in the causation or prevention of disease, and should be part of any public health discipline's library with a focus on improving eye health worldwide.

**Readership:** Non-governmental organizations, eye care program managers, government officials and anybody overseeing eye care services.

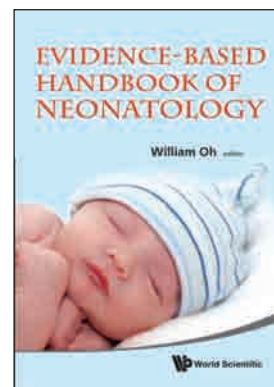
## EVIDENCE-BASED HANDBOOK OF NEONATOLOGY

edited by **William Oh** (*The Warren Alpert Medical School of Brown University, USA*)

The aim of this book is to provide evidence-based information on the management of high-risk newborn infants. The book is not meant to be a comprehensive textbook of Neonatology. It is a handbook that will provide useful and practical information for the clinician who manages the sick newborn infants.

Sick newborn infants represent a very high-risk population that carries high mortality and morbidity. Neonatal Intensive Care Units around the world have been built and staffed to take care of these sick newborns. Although many of the treatment modalities to improve their outcomes are based on solid data derived from basic science and clinical research, some are not and are simply based on anecdotal experience and clinicians' intuition and belief. This publication will elaborate and affirm the management strategies that are based on solid scientific evidence and discuss those that are not. The information will assist neonatologists and pediatricians in providing the best management options for various illnesses that affect this vulnerable population.

**Readership:** Professional neonatologists, pediatric residents, neonatal fellows, neonatal nurses, nurse practitioners, physicians assistants, respiratory therapists, neonatal social workers and nursing students.



### Rights Information:

Non-English language rights available.

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**Hardcover: 540pp**

**Pub. date: Jun 2011**

**978-981-4313-46-9**

**US\$150 / £93**

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## THE FINAL HURDLE

Single Best Answers in Clinical Pharmacology and Therapeutics

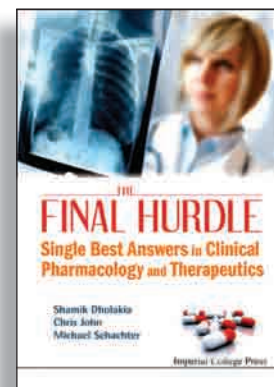
by **Shamik Dholakia** (*Imperial College London, UK*), **Chris John** (*Imperial College London, UK*) & **Michael Schachter** (*Imperial College London, UK*)

A comprehensive learning tool to aid preparation for undergraduate pharmacology examinations, this study guide focuses on reinforcing core concepts, improving exam technique and developing confidence in answering the style of questions used in the examinations.

Its aim is to provide an aid to learning and self-assessment for undergraduates in medicine and other health professionals. The importance of ensuring patient safety and the quality of patient care is becoming more important nationally and internationally, after a period when it was perhaps somewhat neglected in some academic centres. Though this study guide is not a substitute for a comprehensive text on the subject, it will be a useful aid for revision.

There is no current single best answer book available to final year medical students to help them prepare for their final exams. A good and strong understanding of clinical pharmacology and therapeutics is an essential foundation in the development of a medical career, and this book highlights the core concepts through a systematic approach, building confidence in the ability to answer pertinent questions and also reinforcing learning.

**Readership:** Final year medical students, undergraduates in medicine and other health professions.



### Rights Information:

Non-English language rights available.

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**Hardcover: 248pp**

**Pub. date: Feb 2011**

**978-1-84816-743-8**

**US\$64 / £42**

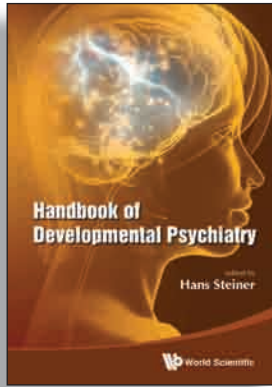
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**Paperback: 248pp**

**978-1-84816-744-5(pbk)**

**US\$30 / £20**

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**Rights Information:**

Non-English language rights available.

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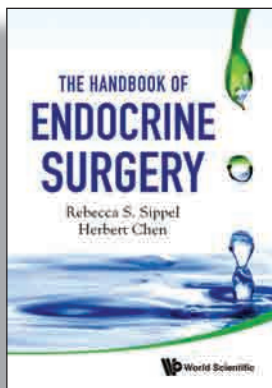
**Hardcover: 600pp (approx.)**

**Pub. date: Jul 2011**

**978-981-4324-81-6**

**US\$158 / £98**

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**Rights Information:**

Non-English language rights available.

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**Hardcover: 450pp (approx.)**

**Pub. date: Aug 2011**

**978-981-4293-19-8**

**US\$152 / £105**

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## HANDBOOK OF DEVELOPMENTAL PSYCHIATRY

edited by **Hans Steiner** (*Stanford University, USA*)

Mental disorders in children and adolescents have gained prominence in recent years, and clinicians in the field are increasingly on the lookout for new methods in diagnosis and treatment. In the last 25 years, the Stanford Division of Child Psychiatry has become one of the premier clinical, research, and educational facilities in child and adolescent psychiatry, both nationally and internationally. Its faculty has distinguished itself in several key domains of psychopathology in both basic and clinical research.

This handbook provides a detailed description of unique diagnostic and treatment approaches to mental disorders in the Stanford Division of Child and Adolescent Psychiatry. Most of the principal authors of this volume are members of or previously affiliated with the Stanford faculty. Readers will thus be privy to Stanford's highly distinct approach, characterized by principles of developmental approaches to psychopathology and an emphasis on integrated treatment packages. Moreover, clinicians will appreciate how the faculty's novel approach to diagnosis and treatment is strongly influenced by pediatric and developmental thinking. Empirical support and practice based rationale for the current diagnostic and treatment algorithms and methodologies in Stanford clinics will be presented in a highly lucid manner.

Written with frontline mental health clinicians in mind, this handbook will prove an invaluable asset to those who wish to implement Stanford's approach to mental disorders in children and adolescents, or simply broaden their horizons on the cutting-edge methods in the field.

**Readership:** Frontline mental health clinicians and medical professionals in child and adolescent psychiatry.

## THE HANDBOOK OF ENDOCRINE SURGERY

by **Rebecca S Sippel & Herbert Chen** (*University of Wisconsin School of Medicine and Public Health, USA*)

This pocket handbook is geared towards surgical endocrinologists in training but will also be useful as a quick reference to the practicing endocrine surgeon or the resident in training during their surgical endocrinology rotation. It provides the essential information physicians need to aid them in the evaluation and management of patients with both straightforward and complex endocrine problems. This book contains practical information about how to order, perform, and interpret laboratory assessments, diagnostic tests and imaging tests, as well as useful treatment algorithms to aid in the care of patients with endocrine disorders.

**Readership:** Surgical endocrinologists in training, practicing endocrine surgeons, medical residents in trainings.

## HEALTH HAZARDS OF ENVIRONMENTAL ARSENIC POISONING

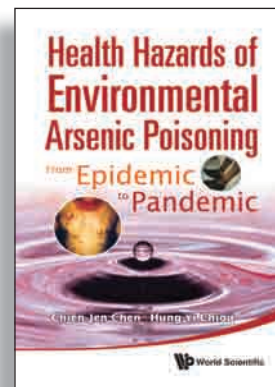
From Epidemic to Pandemic

edited by **Chien-Jen Chen** (*Academia Sinica, Taiwan & National Taiwan University, Taiwan*) & **Hung-Yi Chiou** (*Taipei Medical University, Taiwan*)

This book covers the entire spectrum of health effects induced by chronic arsenic poisoning, which is prevalent in more than 30 countries due to the use of unclean underground water, a result of surface water pollution and shortage. This environmental health disaster has been considered more catastrophic than the Chernobyl nuclear plant explosion in the former Soviet Union and the Bhopal chemical plant explosion in India.

All contributors to this review volume have done extensive research on arsenic poisoning and published excellent papers in internationally well-known journals. *Health Hazards of Environmental Arsenic Poisoning* includes reviews of the state-of-the-art literature and cutting-edge scientific evidence on arsenic-related health effects. It is also an important source of valuable information for health care workers, environmental scientists and epidemiologists, as well as public health practitioners.

**Readership:** Researchers and practitioners in public health, environmental health researchers and toxicologists.



### Rights Information:

Non-English language rights available.

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**Hardcover: 256pp**

**Pub. date: May 2011**

**978-981-4291-81-1**

**US\$99 / £64**

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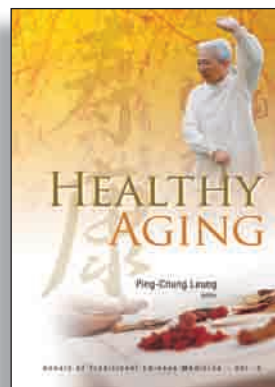
## HEALTHY AGING

edited by **Ping-Chung Leung** (*The Chinese University of Hong Kong, Hong Kong*)

Recent advances in modern medicine have contributed to a longer lifespan for human beings. However, this does not directly translate to healthy living. Modern medicine's major success lies in specifically targeting orientated pathologies. It, however, does not promise healthy longevity.

Healthy longevity requires an absence of life-threatening diseases and maintenance of good quality of life. Oriental medicine emphasizes on the promotion of physiological balance and internal harmony, which are integral for longevity in life. This book defines aging, approaching from the perspective of the frontier bioscientist as well as that of the traditional practitioner. On the international front, Oriental practices are extensively recommended, including herbal supplements and specific training exercises. This book, compiled with the aim of offering solutions to healthy aging, provides an excellent reference for both the elderly and their caregivers.

**Readership:** Public health specialists; health policy and public health departments in ministries of health and universities, Traditional Chinese Medicine practitioners, Chinese medicine educators, clinical and basic Chinese medicine researchers and health science students (particularly Chinese medicine students), herbalists, gerontology researchers, nutritionists, clinicians in Western medicine, medical researchers, professionals at the World Health Organization and affiliated institutions, and pharmaceutical companies.



### Rights Information:

Non-English language rights available.

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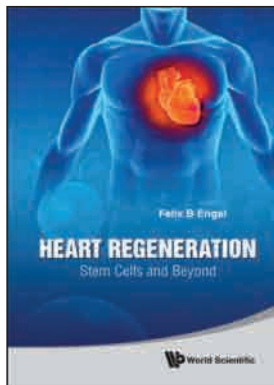
**Hardcover: 284pp**

**Pub. date: Oct 2010**

**978-981-4317-71-9**

**US\$108 / £67**

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**Rights Information:**

Non-English language rights available.

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**Hardcover: 200pp (approx.)**

**Pub. date: Oct 2011**

**978-981-4299-80-0**

**US\$88 / £61**

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## HEART REGENERATION

Stem Cells and Beyond

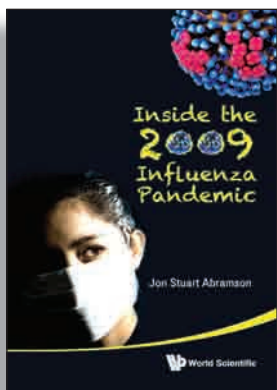
edited by **Felix B Engel** (*Max Planck Institute for Heart & Lung Research,, Germany*)

Injured mammalian hearts do not regenerate but scar. This is a major medical problem, as ischemic heart disease is among the leading causes of morbidity and mortality worldwide. Essential clues for human heart repair are uncovered when zebrafish and newt are found to regenerate cardiac muscle after injury.

This book presents the major advances of the last decade in the field of cardiac regeneration. These recent advances include: demonstration that zebrafish, a genetically tractable system, can regenerate heart; the identification of several new stem cell populations in the heart; demonstration that stem cells can be used to improve heart function; and demonstration that induction of cardiomyocyte proliferation is a realistic future option to repair injured hearts.

This book also provides detailed reviews of the research on model organisms capable of heart regeneration as well as innovative translational research to achieve regeneration in mammals, that comprises work on blood born stem cells, endogenous cardiac stem cells, paracrine factors, reawakening of cardiomyocyte proliferation, and bioengineering. More importantly, the book, in the concluding chapter, dovetails the studies with a comprehensive overview of clinical trials.

**Readership:** Scientists in the field of regenerative biology as well as clinicians and cardiologists. It is also a suitable reading material for graduate students.

**Rights Information:**

Non-English language rights available.

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**Hardcover: 204pp**

**Pub. date: Jan 2011**

**978-981-4324-10-6**

**US\$68 / £44**

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## INSIDE THE 2009 INFLUENZA PANDEMIC

by **Jon Stuart Abramson** (*Wake Forest University School of Medicine, USA*)

The 2009 influenza pandemic, like all emerging infections, had unique characteristics and challenges. This book examines the epidemiology, clinical manifestations and outcome of the 2009 pandemic as compared to seasonal influenza and previous pandemics in both developed and developing countries. Consideration is given to the effectiveness of pre-pandemic planning in mitigating the severity of the disease and what can be done differently to lessen the impact of the next pandemic. As such, the book is designed to provide insight about what can be done going forward to further impact the morbidity and mortality due to both seasonal and pandemic influenza and many of these lessons can be applied to other emerging infections.

There are many lessons to be learned from the 2009 pandemic. This book not only describes what happened in the 2009 pandemic, but also what can be done to better prepare for the next pandemic. Issues discussed include what components of the pandemic planning were effective and which were not. Additionally, the book describes research studies and policy changes that: 1) are needed to better predict the occurrence and severity of a pandemic; 2) improve prevention and treatment modalities; and 3) enable better communication with the public about actions they can take to protect themselves, families and communities.

**Readership:** Graduate students and researchers/practitioners in public health and healthcare, undergraduate students and college educated lay public with an interest in understanding the impact of the 2009 pandemic, practitioners and researchers in infectious disease, microbiology/virology and immunology.

## INTEGRATIVE STRATEGIES FOR CANCER PATIENTS

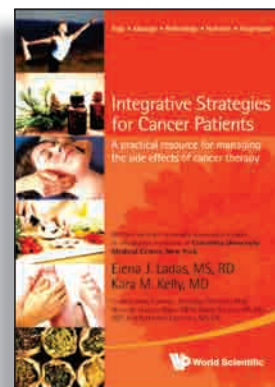
A Practical Resource for Managing the Side Effects of Cancer Therapy  
 edited by **Elena J Ladas** (Columbia University, USA) & **Kara M Kelly** (Columbia University, USA)

*Integrative Strategies for Cancer Patients* is the definitive resource on the benefits of integrative therapies during cancer treatment. The book does not need to be read cover to cover to learn about integrative medicine. Instead it is meant to be a reference handbook for managing the most common side effects afflicting patients with cancer. *Integrative Strategies for Cancer Patients* provides hands-on guidance with illustrations demonstrating how to use complementary/alternative therapies during cancer treatment. Some of the techniques you will learn about in this book are:

Yoga poses and breathing exercises to increase energy and manage shortness of breath

- Acupressure points to reduce nausea, vomiting, and pain
- Aromatherapy (essential oils) to decrease feelings of nausea and anxiety
- Nutrition strategies to help manage loss of appetite, depression, and hot flashes
- Massage techniques to aid in relief of lymphedema, constipation, and loss of libido
- Reflexology applications for neuropathy, headaches, and insomnia
- Dietary supplements to improve symptoms of chemo brain, fatigue, and radiation burns

**Readership:** Oncologists, alternative medicine practitioners, healthcare providers, cancer patients and their caregivers, general public.



### Rights Information:

Non-English language rights available.

**Hardcover: 250pp (approx.)**

**Pub. date: Dec 2011**

**978-981-4313-23-0(pbk)**

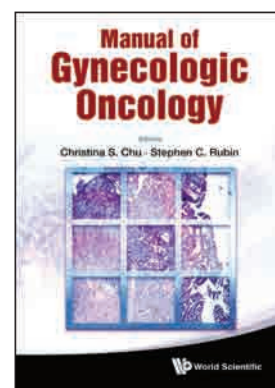
**US\$44 / £30**

## MANUAL OF GYNECOLOGIC ONCOLOGY

edited by **Christina S Chu** & **Stephen C Rubin** (University of Pennsylvania, USA)

This invaluable manual provides a practical overview of the field of gynecologic oncology. Focusing on clinical aspects of the specialty, it provides hands-on guidance for those caring for patients with ovarian, cervical, uterine, and lower genital tract cancers. It describes the current epidemiology, pathophysiology, presentation, diagnosis, and multimodality management of the most common gynecologic malignancies. Chapters are also devoted to radiation and chemotherapy, as well as symptom management. The book is designed for quick reference.

**Readership:** Medical students, OBGYN residents, radiation oncology residents, gynecologic oncology fellows, medical oncology fellows, practicing gynecologic oncologists, medical oncologists, and radiation oncologists.



### Rights Information:

Non-English language rights available.

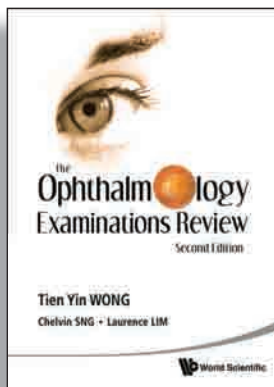
**Hardcover: 350pp (approx.)**

**Pub. date: Jul 2011**

**978-981-4343-69-5**

**US\$118 / £77**



**Rights Information:**

Non-English language rights available.

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**Hardcover: 532pp**

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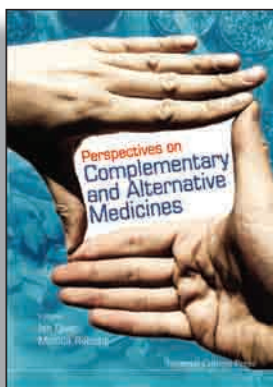
**US\$112 / £73**

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**Paperback: 532pp**

**978-981-4304-41-2(pbk)**

**US\$54 / £35**

**Rights Information:**

Non-English language rights available.

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**Hardcover: 400pp (approx.)**

**Pub. date: Aug 2011**

**978-1-84816-556-4**

**US\$102 / £70**

## THE OPHTHALMOLOGY EXAMINATIONS REVIEW (Second Edition)

by **Tien Yin Wong** (National University of Singapore & University of Melbourne, Australia),  
With Contributions From **Chelvin Sng** (National University Health System, Singapore) &  
**Laurence Lim** (Singapore National Eye Centre, Singapore)

**M**any new treatments and diagnostic procedures in ophthalmology have been refined or newly developed during the past four years, a new edition reflecting these changes is most timely.

The scope and aim of the book will be consistent with the first edition, which provides a broad review of the specialist ophthalmology examinations for final year ophthalmology residents and trainees. The book deals primarily with key facts and topics that are important from the examination perspective. Only information and facts that are considered relevant and critical to the exams are covered, with topics that may be of scientific interest, but are not commonly tested in exams, specifically left out. Time-challenged readers will also benefit from the knowledge acquired from various other sources or textbooks that are now organized and synthesized in this book. While not meant to replace the standard textbooks, enough information is contained within the book to serve as the main revision text nearer the exams.

The style and format of this book is intentionally didactic, with questions and short answers. The answer includes a "model opening statement," followed first by a classification system to aid organization of facts, and then the core explanation in concise short notes. "Exam Tips" are inserted to provide an insight into techniques of answering different types of questions and when appropriate, a "Clinical Approach" section is also included.

In the new edition, topics such as new understanding of disease mechanisms (e.g., genetics of eye diseases), new investigations (e.g., OCT), and novel procedures and treatment (e.g., the use of antivasular endothelial growth factors, new refractive surgical techniques) are covered.

This book will be a valuable guide to the final year ophthalmology residents and trainees taking the specialist ophthalmology examinations, particularly for exams with a strong oral or viva component. Although primarily aimed at candidates attempting the British postgraduate exams (FRCS, FRANZCO, MRCS, MRCOphth and FRCOphth), it is also useful for other examination systems (e.g., the American Boards). Many junior residents, in fact, find the information handy during grand rounds.

**Readership:** Final year ophthalmology residents and trainees for both British postgraduate exams and American Boards exams; and junior residents.

## PERSPECTIVES ON COMPLEMENTARY AND ALTERNATIVE MEDICINES

edited by **Ian N Oliver** & **Monica Robotin** (Cancer Council NSW and University of Sydney, Australia)

**W**ould you use complementary and alternative medicines (CAMs)? Well, research has shown that up to three quarters of patients with cancer may at least supplement their treatment with such therapies, spending as much on CAMs as conventional drugs. How do you decide? This book provides a full range of perspectives on CAMs from patients and CAMs practitioners to conventional doctors who oppose the use of these alternative treatments because of the lack of evidence of efficacy and safety. Then there are the CAMs researchers, educators and regulators who view CAMs from different perspectives. The broad array of opinions build a complete picture of the issues for discerning readers to be adequately informed to make up their minds and draw their own conclusions.

**Readership:** Conventional practitioners and allied health professionals, such as oncologists and oncology nurses as well as pharmacists and psycho-oncologists. Academics in tertiary institutions and alternative medicine practitioners. Health regulators and bureaucrats as well as hospital administrators.

## A PRACTICAL GUIDE TO COMPREHENSIVE STROKE CARE

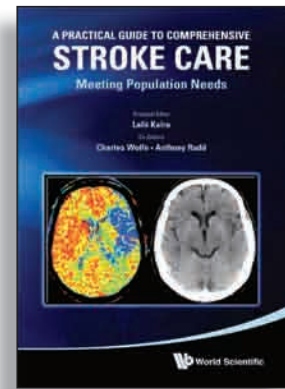
Meeting Population Needs

edited by **Lalit Kalra, Charles Wolfe** (*King's College London, UK*) & **Anthony Rudd** (*Guy's and St Thomas' Hospital, London, UK*)

Written for health professionals and managers involved in the planning or provision of stroke care, this book provides a comprehensive, state-of-the-art overview of the evidence and practices that underpin high quality stroke care. It sets the scene by describing the epidemiology, trends and needs of stroke patients, followed by chapters on the prevention of stroke, investigation and management of TIAs (transient ischaemic attack), early management and thrombolysis, clinical management of acute stroke patients and rehabilitation. Each chapter is thematically-linked and provides a complete, up-to-date review of evidence, its implications for clinical practice, proven multidisciplinary models of delivering high quality care, organisation of services for greatest impact within cost constraints and emerging areas for future management of stroke patients.

This book is unique as it covers areas such as palliative and end-of-life care for stroke patients, planning and provision of stroke services, benchmarking for quality of services and management of stroke patients in community settings. It will be a unique resource for anyone caring for stroke patients, regardless of discipline or level of expertise, and provides a quick and friendly compendium of evidence, good practice and practical hints on organising care.

**Readership:** Health professionals involved in planning or provision of stroke care, including doctors, nurses, specialists, therapists, health service managers and policy makers.



**Rights Information:**

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## SURGICAL REVOLUTIONS

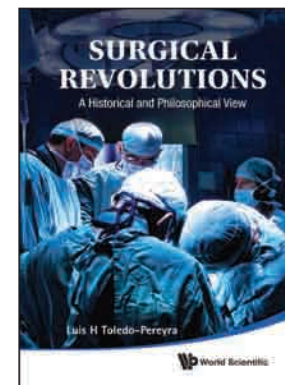
A Historical and Philosophical View

by **Luis H Toledo-Pereyra** (*Michigan State University, USA*)

Many surgical revolutions distinguish the history and evolution of surgery. Some are small, others more dominant, but each revolution improves the art and science of surgery. Surgical revolutionaries are indispensable in the conception and completion of any surgical revolution, initiating scientific and technological advances that propel surgical practice forward. Surgical revolutionaries can come in the guises of Lister (antisepsis), Halsted (surgical residency and safe surgery), Cushing (safe brain surgery), Wangensteen (gastrointestinal physiological surgery), Blalock (relief of cyanotic heart disease), Lillehei (open heart surgery), and many others. With the hindsight of history, we can recognize patterns of progress, evaluate means of advancing new ideas, and solidify details of innovative behavior that could lead to new surgical revolutions.

This volume examines the following vital questions in detail: What is a surgical revolution and how do we recognize one? Are surgical revolutionaries different? Is there a way to educate new surgical revolutionaries? Can history provide enduring examples of surgical revolutions? Are there different kinds of surgical revolutions? What characterizes a surgical revolution in the context of science and technology? What surgical revolutions are on the horizon?

**Readership:** Medical students in training, practicing and retired surgeons, and other medical professionals. The book would also appeal to scientists, historians of science, and mass market readers intrigued by the processes and personalities that shaped modern surgical practice.



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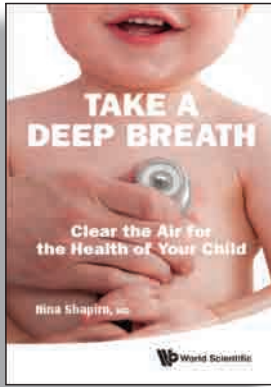
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**US\$59 / £37**

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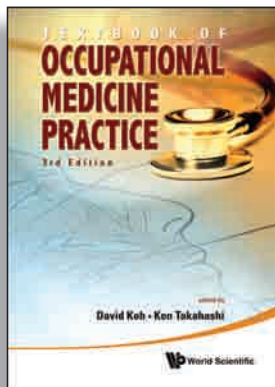
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**US\$108 / £70**

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## TAKE A DEEP BREATH

Clear the Air for the Health of Your Child

by **Nina L Shapiro** (*University of California, Los Angeles, USA*)

**T**ake a Deep Breath" is a comprehensive, accessible, and indispensable guide for parents, caregivers, teachers, pediatricians, and other healthcare providers on the subject of children's breathing issues. The book provides a thorough review of breathing issues, differentiating the normal and abnormal for all ages, and at all levels of breathing passages. "Take a Deep Breath" explains all of the puzzling and oftentimes distressing breathing patterns our children have throughout development.

From the uppermost part of the breathing apparatus, the nose, to the lowermost part, the lungs, this book explains which problems are truly worrisome, and which are actually normal stages in a child's growth. "Take a Deep Breath" will enable the reader to do just that, take a deep breath, and get a better, clearer understanding about what's going on when your children breathe in and out. While pediatricians and other healthcare providers have expertise in all aspects of childhood illness, this book sheds new light on the latest research in pediatric breathing issues, sleep issues, and airway safety. Consisting of age-based sections, with location-based and problem-based chapters for each age group, each chapter also provides a 'to-do' list, offering successful preventions and treatments that can easily be done at home.

About 80 to 90% of children, at one time or another, have breathing problems. "Take a Deep Breath" will be a welcome, indispensable tool in all households with children. Day care providers, grandparents, babysitters and nannies, and parents' clubs will all benefit from this book immensely.

**Readership:** Parents, caregivers, teachers, pediatricians, primary care physicians.

## TEXTBOOK OF OCCUPATIONAL MEDICINE PRACTICE (3rd Edition)

edited by **David Koh** (*National University of Singapore*) &

**Ken Takahashi** (*University of Occupational and Environmental Health, Japan*)

**T**his book provides a link between occupational health and clinical practice. It aims to provide a valuable starting point for health professionals with an interest in occupational medicine as well as those intending to specialize in occupational medicine. It will also serve as a useful guide for all those who are interested in occupational medical practice. These include medical students at various levels, occupational health nurses, general practitioners, or colleagues and professionals in occupational health and safety — in other words, for all who have committed themselves to do the best practice for the health of working people.

This third edition of the textbook has been fully revised and includes new materials and chapters. The contents of the book have been streamlined to appear in two sections. The approach of examining occupational health issues and concerns from the standpoint of clinical presentations of the different organ systems is retained. These clinically oriented chapters form Section One. Section Two comprises issues of special interest to occupational health practitioners such as screening and routine medical examinations, assessment of disability for compensation, medical planning and management of industrial disasters, occupational medicine practice and the law, and the prevention of occupational diseases.

Several changes have directly resulted from feedback from readers of the previous editions. Among these are the inclusion of new chapters on occupational infections, metabolic disorders, and occupational medicine practice and the law. As before, case studies have been incorporated in the chapters to make clear the relevant issues.

**Readership:** Graduate students, practitioners and researchers in occupational and public health.

## NANOSTRUCTURES AND NANOMATERIALS

Synthesis, Properties, and Applications

### (2nd Edition)

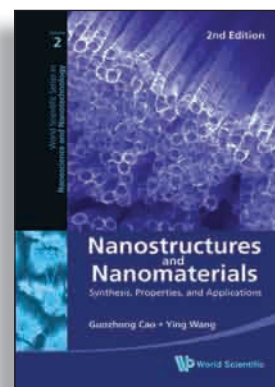
by **Guozhong Cao** (*University of Washington, USA*) &

**Ying Wang** (*Louisiana State University, USA*)

This is the 2nd edition of the original "Nanostructures and Nanomaterials" written by Guozhong Cao and published by Imperial College Press in 2004.

This important book focuses not only on the synthesis and fabrication of *nanostructures and nanomaterials*, but also includes properties and applications of nanostructures and nanomaterials, particularly inorganic nanomaterials. It provides balanced and comprehensive coverage of the fundamentals and processing techniques with regard to synthesis, characterization, properties, and applications of nanostructures and nanomaterials. Both chemical processing and lithographic techniques are presented in a systematic and coherent manner for the synthesis and fabrication of 0-D, 1-D, and 2-D nanostructures, as well as special nanomaterials such as carbon nanotubes and ordered mesoporous oxides. The book will serve as a general introduction to nanomaterials and nanotechnology for teaching and self-study purposes.

**Readership:** Senior undergraduates, graduate students, academics and researchers in nanomaterials and nanostructures.



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**US\$99 / £61**

## NANOSCALE INTERFACE FOR ORGANIC ELECTRONICS

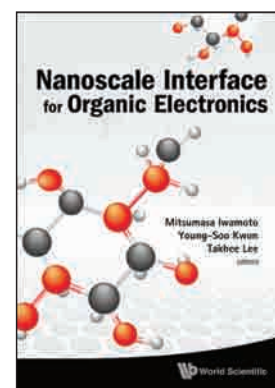
edited by **Mitsumasa Iwamoto** (*Tokyo Institute of Technology, Japan*), **Young-Soo Kwon**

(*Dong-A University, Korea*) & **Takhee Lee** (*Gwangju Institute of Science and Technology, Korea*)

The scope of this book will be focused on the interface issues and problems in organic materials as electronic device applications. The organic material electronics is a rapidly progressing field for potential applications in flexible field effect transistors, plastic solar cells, organic luminescent devices, etc.

However, the performance of these organic devices is still not sufficient. To enhance the understanding and practical applications of organic devices, we need to understand the fundamental organic device physics which is somewhat different from the conventional inorganic device physics. This book will discuss the detailed progress in these topics.

**Readership:** Senior undergraduates, graduate students, academics and researchers in nanoelectronics.



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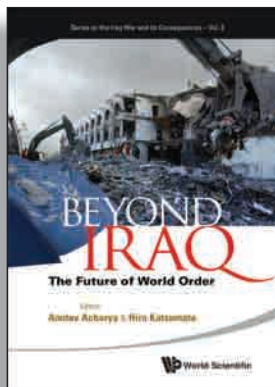
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**US\$120 / £74**



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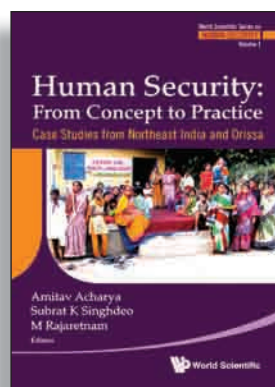
**US\$74 / £48**

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**Paperback: 164pp**

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**US\$32 / £21**



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**Pub. date: Feb 2011**

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**US\$95 / £59**

## BEYOND IRAQ

The Future of World Order

edited by **Amitav Acharya** (*American University, USA*) &

**Hiro Katsumata** (*Waseda University Institute of Asia-Pacific Studies, Japan*)

**H**ow does the Iraq War affect the future world order? What kinds of problems has this war brought about, and what is needed to remedy these problems, so as to reconstruct an order in Iraq and beyond? The present volume is a collection of essays exploring these issues, written by leading scholars in their respective fields. Importantly, the Iraq War has caused numerous long-term security and economic problems in Iraq (Chapter 1) and in the Middle East (Chapter 2). In addition, this war represents a failure of the Western liberals' project of establishing a liberal market democracy, and these liberals are likely to repeat the same error elsewhere in the future (Chapter 3). Moreover, the war underlines the crisis in global governance today, but the idea of reforming the United Nations has some serious limitations (Chapter 4). With regard to the issue of terrorism, "Al-Qaeda in Iraq" has been operating in the field for some time, and thus Iraq will likely remain an important global center of terrorism in the foreseeable future (Chapter 5).

**Readership:** Students, researchers, and academics in political science and international relations, with a focus on the Middle East; general readers interested in the Iraq War and contemporary events in the Middle East.

## HUMAN SECURITY: FROM CONCEPT TO PRACTICE

Case Studies from Northeast India and Orissa

edited by **Amitav Acharya** (*American University, USA*), **Subrat K Singhdeo**

(*Madhyam Foundation, India*) & **M Rajaretnam** (*Asian Dialogue Society, Singapore*)

**H**uman security is a new paradigm for security, development and justice. Since it was first proposed in the 1990s, there has been an endless debate between its proponents and critics, and even among its advocates, over the meaning and utility of the concept. What is important now is to move the concept beyond the realm of theory and explore its practical applications, considering possible policy perspectives and implications. This book suggests new practical applications of the human security concept, such as human security mapping, the human security governance index and human security impact assessment. Using Northeast India and Orissa as case studies, the methodology introduced in this path-breaking book can be applied to conflict zones worldwide. By designating the individual rather than the state as the referent object of security, human security is emerging as a framework that can serve as a means to evaluate threats, foresee crises, analyze causes of discord and propose solutions entailing a redistribution of responsibilities.

**Readership:** Researchers, professionals and non-governmental organizations dealing with human security issues.

## INFRASTRUCTURE REGULATION: WHAT WORKS, WHY AND HOW DO WE KNOW?

Lessons from Asia and Beyond

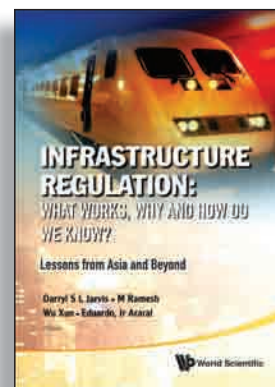
edited by **Darryl S L Jarvis, M Ramesh, Xun Wu & Eduardo Araral, Jr.**  
(National University of Singapore)

Regulation of public infrastructure has been a topic of interest for more than a century. Providing public goods, securing their financing, maintenance, and improving the efficiency of their delivery, has generated a voluminous literature and series of debates. More recently, these issues have again become a central concern, as new public management approaches have transformed the role of the state in the provision of public goods and the modalities by which the financing of infrastructure and its operation are procured.

Yet, despite the proliferation of new modalities of regulating infrastructure little is known about what works and why. Why do certain regulatory regimes fail and others succeed? What regulatory designs and institutional features produce optimal outcomes and how? And why do regulatory forms of governance when transplanted into different institutional contexts produce less than uniform outcomes?

This book addresses these questions, exploring the theoretical foundations of regulation as well as a series of case studies drawn from the telecommunications, electricity, and water sectors. It brings together distinguished scholars and expert practitioners to explore the practical problems of regulation, regulatory design, infrastructure operation, and the implications for infrastructure provision.

**Readership:** Students and academics studying and teaching urban and infrastructure policy; public policy professionals and policy makers.



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## PSYCHOPATHOLOGY AND WORLD POLITICS

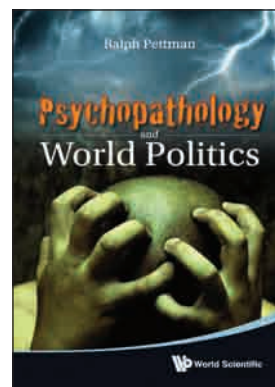
by **Ralph Pettman** (University of Melbourne, Australia)

This unique work looks at the relationship between psychopathology and world politics. What happens when the brain/mind ceases to function properly? How does this impinge on world affairs? What is to be done, for example, when a leader ceases to act in a seemingly sane fashion and yet still commands the loyalty of those who maintain him or her in office? What is to be done when a leader's advisers seem rational but are clearly not? Indeed, what is to be done when a whole society goes insane? This is to raise more questions than a single work can adequately answer.

In lieu of a comprehensive account, which would be beyond the scope of one study, what this book does is first describe psychopathology in general terms and its relationship to world affairs. It then looks at denial in particular and at "speaking the truth" as a potentially therapeutic antidote, especially in relation to nuclear weapons. It follows this by looking at delusion in general and at what being "in touch" with reality might entail with regard to a so-called "failed state".

With topics ranging from Hitler's mental health to the continuing threat of nuclear Armageddon, this book is a valuable contribution to the field of international politics and modern psychology, and will hopefully lead to a better understanding of contemporary world affairs and the global issue of conflict resolution.

**Readership:** Students, researchers and academics in international relations and psychology/psychiatry; general readers interested in the relationship between psychopathology and world politics.



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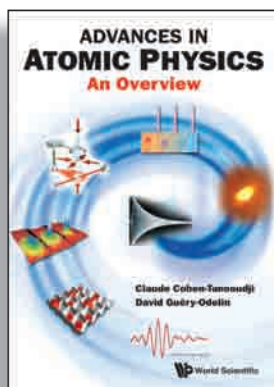
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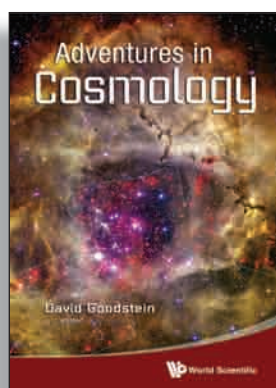
**US\$98 / £61**

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**978-981-4313-85-8**

**US\$86 / £57**

## ADVANCES IN ATOMIC PHYSICS

An Overview

by **Claude Cohen-Tannoudji** (*Laboratory Kastler Brossel, France*) &  
**David Guéry-Odelin** (*Laboratory Collisions Agrégats Réactivité, France*)

This book presents a comprehensive overview of the spectacular advances seen in atomic physics during the last 50 years. The authors explain how such progress was possible by highlighting connections between developments that occurred at different times. They discuss the new perspectives and the new research fields that look promising. The emphasis is placed, not on detailed calculations, but rather on physical ideas. Combining both theoretical and experimental considerations, the book will be of interest to a wide range of students, teachers and researchers in quantum and atomic physics.

**Readership:** Graduate students, researchers and academics interested in quantum and atomic physics.

## ADVENTURES IN COSMOLOGY

edited by **David Goodstein** (*California Institute of Technology*)

This volume tells of the quest for cosmology as seen by some of the finest cosmologists in the world. It starts with "Galaxy Formation from Start to Finish" and ends with "The First Supermassive Black Holes in the Universe," exploring in between the grand themes of galaxies, the early universe, expansion of the universe, dark matter and dark energy. This up-to-date collection of review articles offers a general introduction to cosmology and is intended for all probing into the profound questions on where we came from and where we are going.

**Readership:** Students, researchers and academics interested in cosmology.

## BCS: 50 YEARS

edited by **Leon N Cooper** (*Brown University, USA*) & **Dmitri Feldman** (*Brown University, USA*)

The BCS theory of superconductivity developed in 1957 by Bardeen, Cooper and Schrieffer has been remarkably successful in explaining the properties of superconductors. In addition, concepts from BCS have been incorporated into diverse fields of physics, from nuclear physics and dense quark matter to the current standard model. Practical applications include SQUIDs, magnetic resonance imaging, superconducting electronics and the transmission of electricity. This invaluable book is a compilation of both a historical account and a discussion of the current state of theory and experiment.

With contributions from many prominent scientists, it aims to introduce students and researchers to the origins, the impact and the current state of the BCS theory.

**Readership:** Students, researchers and academics interested in BCS theory and its origin.



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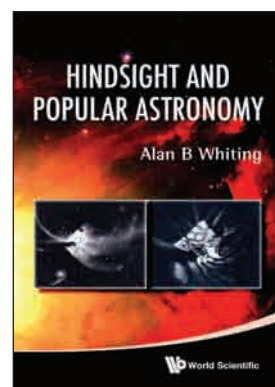
## HINDSIGHT AND POPULAR ASTRONOMY

by **Alan B Whiting** (*University of Birmingham, UK*)

There are many books that endeavor to bridge the gap between scientists and laymen, yet too many overemphasize the presentation of scientific findings as hard facts and end up alienating readers from the critical thinking processes involved in science.

Whiting attempts to break away from the norm in this revolutionary review of popular astronomy books written from 1833 to 1944. He examines these important works by acknowledged authorities in the field to see how they have stood the test of time. Where the luminaries have failed, he looks for clues that the layman reader could have used to raise doubts about what was being said. The aim of this highly accessible book is to develop tools for the non-scientist to evaluate the strange and marvelous results that astronomers report, in place of the highly-developed scientific and mathematical techniques available to the scientists themselves. A must-read for all science and astronomy enthusiasts.

**Readership:** Written for the interested layperson.



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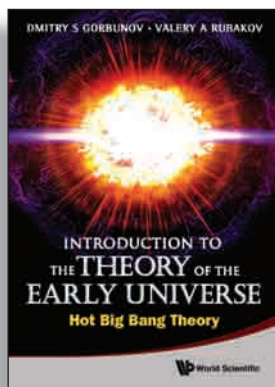
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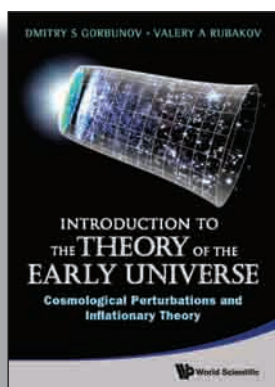
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**US\$78 / £51**

## INTRODUCTION TO THE THEORY OF THE EARLY UNIVERSE

Cosmological Perturbations and Inflationary Theory

by **Dmitry S Gorbunov** (*Russian Academy of Sciences, Russia*) &

**Valery A Rubakov** (*Russian Academy of Sciences, Russia & Moscow State University, Russia*)

This book accompanies another book by the same authors, *Introduction to the Theory of the Early Universe: Hot Big Bang Theory* and presents the theory of the evolution of density perturbations and relic gravity waves, theory of cosmological inflation and post-inflationary reheating. Written in a pedagogical style, the main chapters give a detailed account of the established theory, with derivation of formulas. Being self-contained, it is a useful textbook for advanced undergraduate students and graduate students. Essential materials from General Relativity, theory of Gaussian random fields and quantum field theory are collected in the appendices. The more advanced topics are approached similarly in a pedagogical way. These parts may serve as a detailed introduction to current research.

**Readership:** Cosmologists, advanced undergraduate and graduate students.

## INTRODUCTION TO THE THEORY OF THE EARLY UNIVERSE

Hot Big Bang Theory

by **Dmitry S Gorbunov** (*Institute for Nuclear Research of the Russian Academy of Sciences, Russia*) & **Valery A Rubakov** (*Institute for Nuclear Research of the Russian Academy of Sciences, Russia & Moscow State University, Russia*)

This book is written from the viewpoint of a deep connection between cosmology and particle physics. It presents the results and ideas on both the homogeneous and isotropic Universe at the hot stage of its evolution and in later stages. The main chapters describe in a systematic and pedagogical way established facts and concepts on the early and the present Universe. The comprehensive treatment, hence, serves as a modern introduction to this rapidly developing field of science. To help in reading the chapters without having to constantly consult other texts, essential materials from General Relativity and the theory of elementary particles are collected in the appendices. Various hypotheses dealing with unsolved problems of cosmology, and often alternative to each other, are discussed at a more advanced level. These concern dark matter, dark energy, matter-antimatter asymmetry, etc.

This book is accompanied by another book by the same authors, *Introduction to the Theory of the Early Universe: Cosmological Perturbations and Inflationary Theory*.

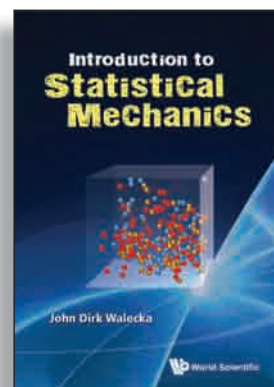
**Readership:** Cosmologists, advanced undergraduate and graduate students.

## INTRODUCTION TO STATISTICAL MECHANICS

by **John Dirk Walecka** (*College of William and Mary, USA*)

The science of statistical mechanics is concerned with defining the thermodynamic properties of a macroscopic sample in terms of the properties of the microscopic systems of which it is composed. The aim of this book is to provide a clear, logical, and self-contained treatment of equilibrium statistical mechanics starting from Boltzmann's two statistical assumptions, and to present a wide variety of applications to diverse physical assemblies. The coverage is enhanced and extended through an extensive set of accessible problems. An appendix provides an introduction to non-equilibrium statistical mechanics through the Boltzmann equation and its extensions. The book assumes introductory courses in classical and quantum mechanics, as well as familiarity with multi-variable calculus and the essentials of complex analysis. Some knowledge of thermodynamics is assumed, although the book starts with an appropriate review of that topic. The targeted audience is first-year graduate students, and advanced undergraduates, in physics, chemistry, and the related physical sciences. The goal of this text is to help the reader obtain a clear working knowledge of the very useful and powerful methods of equilibrium statistical mechanics and to enhance the understanding and appreciation of the more advanced texts.

**Readership:** Advanced undergraduates, beginning graduate students in physics, chemistry and related physical sciences.



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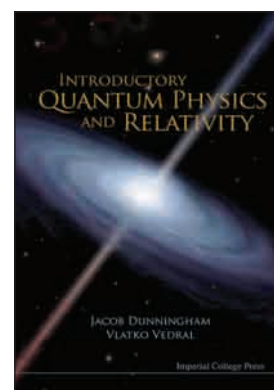
**US\$58 / £38**

## INTRODUCTORY QUANTUM PHYSICS AND RELATIVITY

by **Jacob Dunningham** (*University of Leeds, UK*) & **Vlatko Vedral** (*University of Oxford, UK & National University of Singapore*)

This book is based on the lecture courses taught by Dunningham and Vedral at the University of Leeds. The book contains all the necessary material for quantum physics and relativity in the first two years of a typical physics degree course. The choice of topics complies fully with the Institute of Physics guidelines, but the coverage also includes more interesting and up-to-date applications, such as Bose condensation and quantum teleportation.

**Readership:** Students and professionals.



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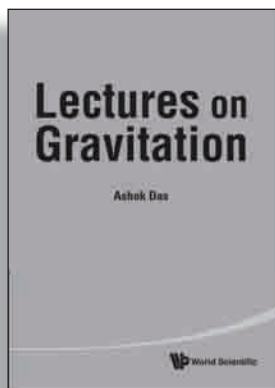
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**Paperback: 240pp**

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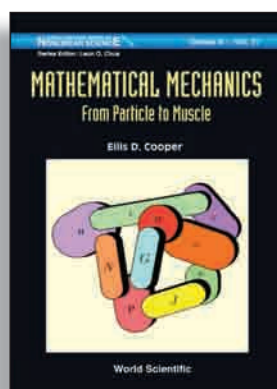
**Pub. date: Jan 2011**

**978-981-4329-37-8**  
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**Paperback: 352pp**

**978-981-4329-38-5(pbk)**  
**US\$48 / £30**



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**Hardcover: 392pp**

**Pub. date: Mar 2011**

**978-981-4289-70-2**  
**US\$72 / £48**

## LECTURES ON GRAVITATION

by **Ashok Das** (*University of Rochester, USA & Saha Institute of Nuclear Physics, India*)

This book is a compilation of the lectures for a one-semester course on gravitation at the University of Rochester. Starting from a simple description of geometry, the topics are systematically developed to the big bang theory with a simple derivation of the cosmic background temperature. Several informative examples are worked out in detail as well.

**Readership:** Undergraduates and graduate students interested in gravitation and general relativity.

## MATHEMATICAL MECHANICS

From Particle to Muscle

by **Ellis D Cooper** (*Retired teacher from Rockport High School, USA*)

This unprecedented book offers all the details of the mathematical mechanics underlying modern modeling of skeletal muscle contraction. The aim is to provide an integrated vision of mathematics, physics, chemistry and biology for this one understanding. The method is to take advantage of latest mathematical technologies — Eilenberg-Mac Lane category theory, Robinson infinitesimal calculus and Kolmogorov probability theory — to explicate Particle Mechanics, The Theory of Substances (categorical thermodynamics), and computer simulation using a diagram-based parallel programming language (stochastic timing machinery). Proofs rely almost entirely on algebraic calculations without set theory. Metaphors and analogies, and distinctions between representational pictures, mental model drawings, and mathematical diagrams are offered.

AP level high school calculus students, high school science teachers, undergraduates and graduate college students, and researchers in mathematics, physics, chemistry, and biology may use this integrated publication to broaden their perspective on science, and to experience the precision that mathematical mechanics brings to understanding the molecular mechanism vital for nearly all animal behavior.

**Readership:** High school mathematics teachers; undergraduates, graduate student and researchers in mathematics, physics, chemistry and biology interested in understanding muscular mechanism through mathematical mechanics.

## PLASMONICS AND PLASMONIC METAMATERIALS

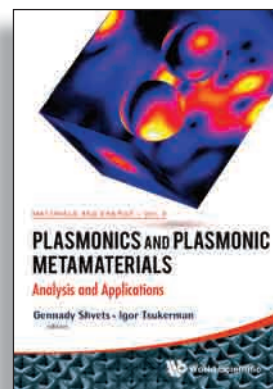
Analysis and Applications

edited by **Gennady Shvets** (*The University of Texas, Austin, USA*) &

**Igor Tsukerman** (*The University of Akron, USA*)

This book is a collection of the works of leading experts worldwide in the rapidly developing fields of plasmonics and metamaterials. These developments are promising to revolutionize ways of generating, controlling and processing light in the nanoscale. The technological applications range from nano-lasers to optical nano-waveguides to artificial media with unusual and exotic optical properties unattainable in natural materials. The volume cuts across all relevant disciplines and covers experiments, measurements, fabrication, physical and mathematical analysis, as well as computer simulation.

**Readership:** Physicists, chemists and materials scientists; advanced undergraduate and graduate students in physics.



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**Pub. date: Sep 2011**

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**US\$135 / £88**

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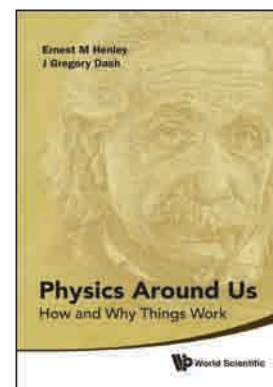
## PHYSICS AROUND US

How and Why Things Work

by **Ernest M Henley** & **J Gregory Dash** (*University of Washington, USA*)

This book is suitable for a first year, non-calculus physics course. It covers mechanics, fluids, gravitation, thermal physics, electricity and magnetism, and modern physics, including atoms, an introduction to quantum mechanics, special relativity, and nuclear and particle physics. Trigonometric functions and vectors are introduced as needed.

**Readership:** Advanced high school students, beginning college students and all individuals interested in transition school physics.



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**978-981-4350-63-1 (pbk)**

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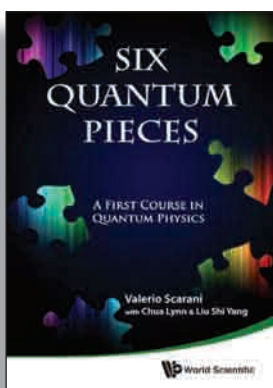
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**Hardcover: 160pp**

**Pub. date: Sep 2010**

**978-981-4327-53-4**

**US\$48 / £30**

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**Paperback: 160pp)**

**978-981-4327-54-1(pbk)**

**US\$24 / £15**

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## THE QUANTUM ADVENTURE

Does God Play Dice?

by **Alex Montwill & Ann Breslin** (*University College Dublin, Ireland*)

Quantum theory revolutionized physics at the beginning of the last century. Einstein was one of its originators, but as the implications of the theory emerged, he began to have doubts. Are the most basic physical processes based on probability? Is the Universe governed by chance? Do physical objects have an independent existence or do they exist only in our perception? The ramifications may appear bizarre but they are inherent to this perplexing subject.

*The Quantum Adventure* deals with the birth and growth of quantum mechanics. It explains the “classical dilemma” which faced physics at the start of the 20th Century and goes on to show how quantum mechanics emerged and flourished. Difficult and abstract concepts are treated with minimal mathematics and maximal physical imagery. Snippets of information about the dramatis personae are woven into the text and add color to what is traditionally perceived as a complex and challenging topic. A must-read for anyone interested in quantum physics.

**Readership:** General public with an interest in science, quantum physics or history of science.

## SIX QUANTUM PIECES

A First Course in Quantum Physics

by **Valerio Scarani** (*National University of Singapore*), **Lynn Chua** (*NUS High School of Mathematics and Science, Singapore*) & **Shi Yang Liu** (*NUS High School of Mathematics and Science, Singapore*)

This book is an original first approach to quantum physics, the core of modern physics. It combines the competence of a well-known researcher in quantum information science and the freshness in style of two high school students.

Quantum physics is known to be challenging for two reasons: it describes counter-intuitive phenomena and employs rather advanced mathematics. The description of “traditional” quantum phenomena (the structure of atoms and molecules, the properties of solids, the zoology of sub-atomic particles) does indeed involve the whole formalism. However, some other striking phenomena, somehow the most “typically quantum” ones, can be described using only high school mathematical skills. This approach exploits this fact, thus making it possible for a beginner to tackle mind-boggling experiments like teleportation and the violation of Bell’s inequalities, and practice notions like superposition, entanglement and decoherence.

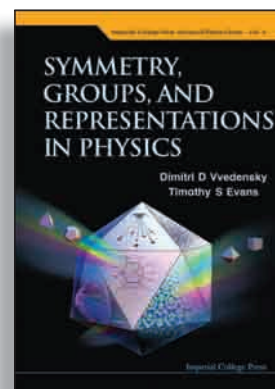
**Readership:** High school students, first year undergraduates, university professors/lecturers in physics, computer science and computer engineering.

## SYMMETRY, GROUPS, AND REPRESENTATIONS IN PHYSICS

by **Dimitri D Vvedensky & Timothy S Evans** (*Imperial College London, UK*)

This book is an introduction to symmetry in physics based on discrete and continuous groups. No knowledge of algebra is assumed and the book is suitable for both beginning and advanced graduate students. In fact, at Imperial College, the notes on which this book is based have been thoroughly tested in the classroom by two lecturers with quite different backgrounds (condensed matter theory and field theory) to classes composed of third- and fourth-year undergraduate students as well as students from the MSc in Quantum Fields and Fundamental Forces program. Abundant exercises, all with detailed solutions that are available in a separate instructor's manual, are included to illustrate the concepts introduced in the main text, to extend some of the main results, and to introduce new ideas. One of the main themes in the book is the application of group theory to physical problems.

**Readership:** Undergraduate and graduate students in group theory.



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**Hardcover: 350pp (approx.)**

**Pub. date: Jan 2012**

**978-1-84816-371-3**

**US\$77 / £53**

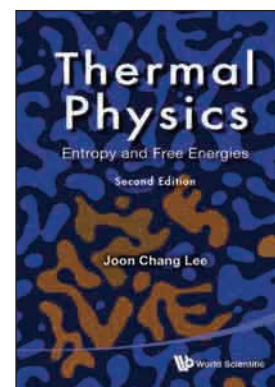
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## THERMAL PHYSICS Entropy and Free Energies (Second Edition)

by **Joon Chang Lee** (*University of Southern Mississippi, USA*)

The book aims to explain the basic ideas of thermal physics intuitively and in the simplest possible way. It is intended to make the reader feel comfortable with the ideas of entropy and of free energy. Thermal physics is prone to misunderstanding, confusion and is often overlooked. However, a good foundation is necessary to prepare the reader for advanced level studies.

**Readership:** For undergraduate and beginning graduate students in physics, physical chemistry, polymer chemistry, and also chemical, materials and mechanical engineering as well as for professionals.



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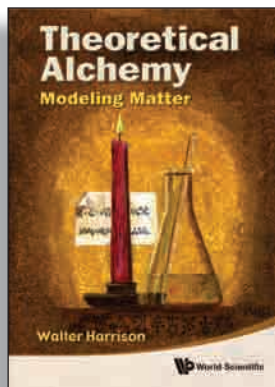
**Hardcover: 392pp**

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**978-981-4340-76-2**

**US\$78 / £48**

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**978-981-4322-13-3**

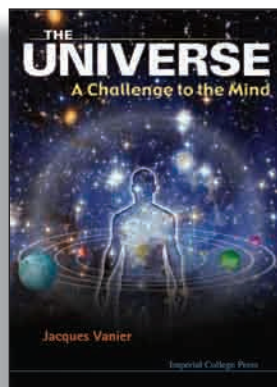
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**Hardcover: 532pp**

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**Paperback: 532pp**

**978-1-84816-602-8(pbk)**

**US\$54 / £33**

## THEORETICAL ALCHEMY

### Modeling Matter

by **Walter Harrison** (*Stanford University, USA*)

The best way to understand chemical bonding may be to take a view appropriate to each individual system, a view which may be quite different for various systems. Sometimes two very different views are appropriate for the same system, and then the combination may even give the parameters needed to estimate the bonding energy by hand. Density Functional Theory, on the other hand, generally tries to take one view as applicable to all systems, and proceeds computationally.

In contrast to the author's two previous well-known textbooks, *Electronic Structure and the Properties of Solids* (1989) and *Elementary Electronic Structure* (1999), in this book he tries to distill the essence of the representation of electronic structure in a much briefer description. It is shortened by focusing primarily on the bonding energies, the energy gained in assembling atoms as a molecule or a solid, or as a solid with a surface. A central point is that the same description of the electronic structure which gives this cohesion, can also be used to understand all of the other properties, though those other properties are not emphasized here. The effort is characterized by the title, which combines the modern word "theory" with the ancient effort of "alchemy" to make sense of the material world.

**Readership:** Students and researchers in condensed matter physics, solid state physics, semiconductors, physical chemistry, chemical physics, materials science, applied physics and solid-state chemistry.

## THE UNIVERSE

### A Challenge to the Mind

by **Jacques Vanier** (*University of Montreal, Canada*)

In this book the author gives a comprehensive picture of the physical laws that appear to regulate the functioning of the Universe from the atomic to the cosmic world. The book offers a description of the main fields of physics — classical physics, relativity, quantum mechanics and particle physics — as they are applied to the atomic world and the cosmos to describe how the whole Universe has evolved to the present state. The description concentrates on the essentials, describing our present knowledge of those physical laws and outlining our limitations in understanding the whole picture. This is done essentially without equations, except for a few important ones.

The text includes a short Annex for mathematically inclined readers who wish to see how the physical principles and laws expressed in words can be visualized in the language of mathematics, but the book can be read without referring to that Annex. Also, *The Universe* explains in depth those laws and outlines their limitations. The author, however, does this in an accessible language that should be understandable to non-specialists. In particular, he occasionally uses two young characters placed in various situations to explain the physics involved in those situations by means of their observations. The author uses also numerous clear pictures and graphics that make the text more easily comprehensible.

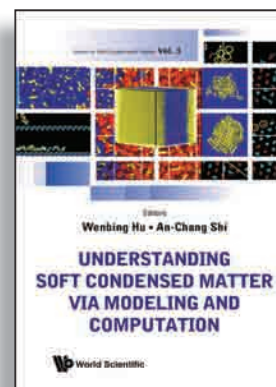
**Readership:** Students in their freshman to sophomore years who want to have a general view of the field of physics, professors who want to broaden their horizon, specialized scientists and engineers who want to broaden their knowledge as well as the educated public in general.

## UNDERSTANDING SOFT CONDENSED MATTER VIA MODELING AND COMPUTATION

edited by **Wenbing Hu** (*Nanjing University, China*) & **An-Chang Shi** (*McMaster University, Canada*)

All living organisms consist of soft matter. For this reason alone, it is important to be able to understand and predict the structural and dynamical properties of soft materials such as polymers, surfactants, colloids, granular matter and liquids crystals. To achieve a better understanding of soft matter, three different approaches have to be integrated: experiment, theory and simulation. This book focuses on the third approach — but always in the context of the other two.

**Readership:** Advanced undergraduates, graduate students and researchers in mathematics, physics and chemistry



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**Hardcover: 384pp**

**Pub. date: Dec 2010**

**978-981-4295-58-1**

**US\$118 / £73**

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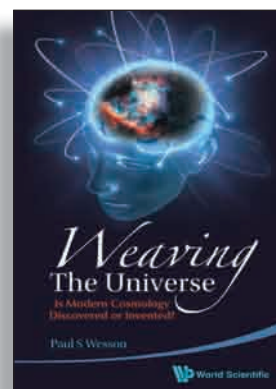
## WEAVING THE UNIVERSE

Is Modern Cosmology Discovered or Invented?

by **Paul S Wesson** (*University of Waterloo, Canada*)

This new book is a thorough but short review of the history and present status of ideas in cosmology. It is aimed at a broad audience, but will contain a few equations where needed to make the argument exact. The coverage of cosmological ideas will focus mainly on the period from the early 1900s when Einstein formulated relativity and when his colleague Sir Arthur Eddington was creating relativistic models of the universe. It ends with the completion of the Large Hadron Collider in late 2008, having surveyed modern ideas of particle physics and astrophysics. To organize the large body of information involved, the book uses the life of Eddington and the weaving together of ideas in cosmology as themes. This should provide a clear and entertaining account presented in a historical context that leads up to the present day.

**Readership:** For academics, researchers and astrophysics enthusiasts.



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**Hardcover: 216pp**

**Pub. date: Sep 2010**

**978-981-4313-94-0**

**US\$65 / £45**

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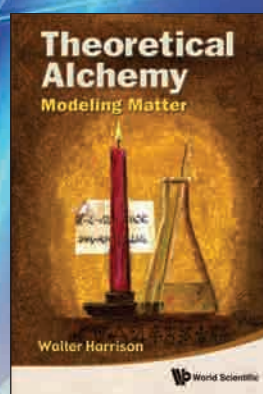
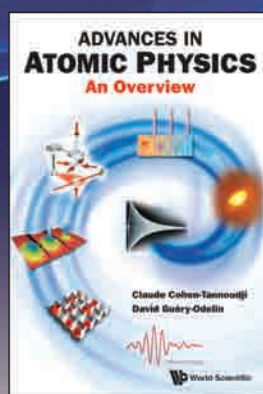
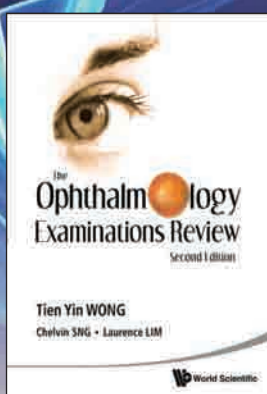
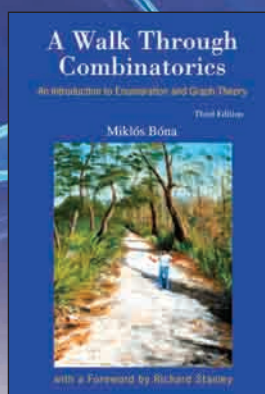
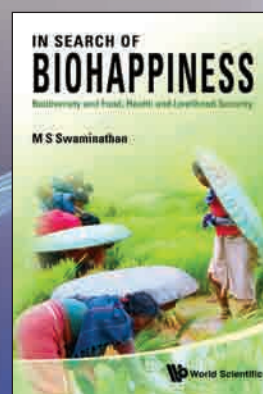
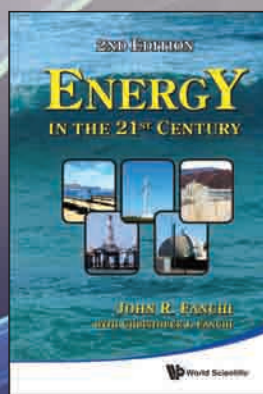
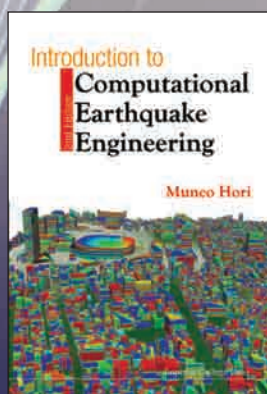
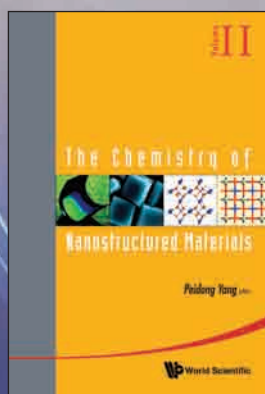
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