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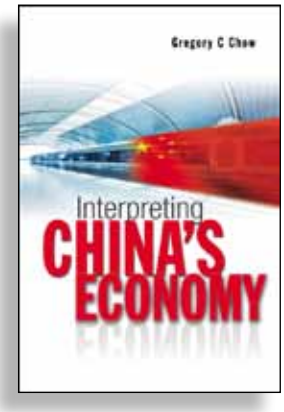

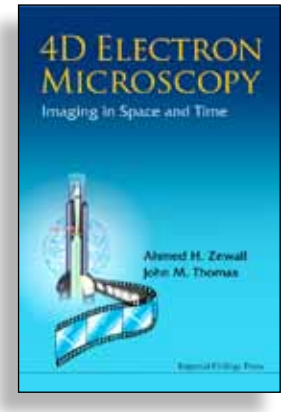

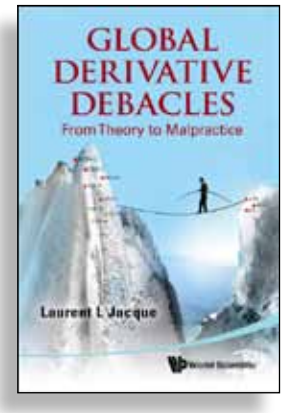

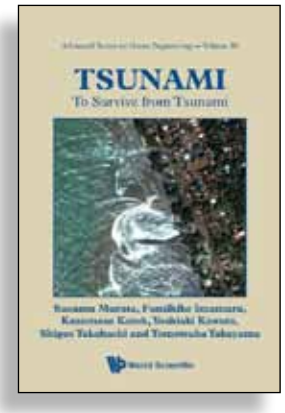

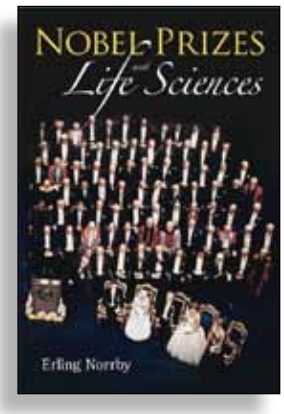

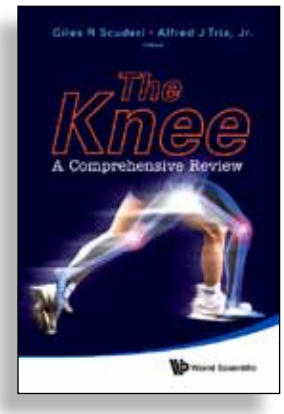

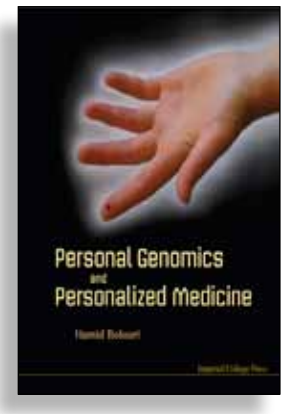

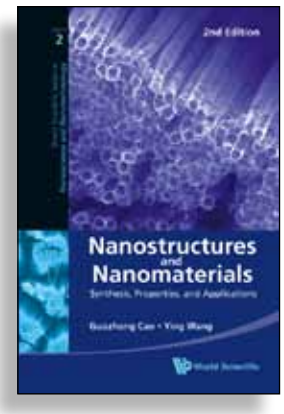

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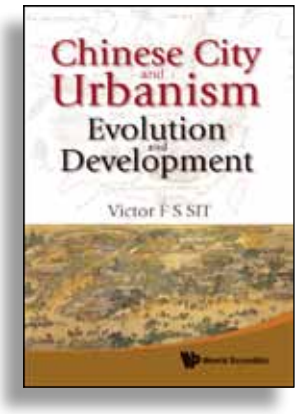

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Non-English language **(except Chinese)** rights available.

Hardcover: 356pp
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978-981-4293-72-3
US$52 / £34

CHINESE CITY AND URBANISM

Evolution and Development

by **Victor F S Sit** *(Hong Kong Baptist University, Hong Kong)*

The purpose of this volume is to treat the progress of history, civilization and urban development of China together in order to demonstrate the unique qualities of Chinese civilization.

The author uses historical dynasties as the vertical dimension, starting from the pre-urban origin of round-moat village settlements of the Yangshao Period, until the most recent transitional city under the present "socialist market system". There are a total of 13 chapters, covering a time-span of roughly 6,000 years.

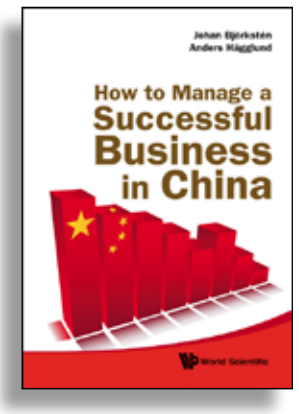
The book also discusses the theoretical context of the uniqueness of Chinese urban evolution and compares it with experiences in the West. It comprehensively treats major events, economic developments, territorial changes, and developments in technology, art and culture, military as well as administrative systems in the dynasties as urban change dynamics. The material therefore succinctly covers 6,000 years of Chinese cultural history.

Besides using a large amount of Chinese literature — including materials on recent archeological finds — the volume explores substantial Western literature on relevant issues with the purpose of putting the Chinese experience in a global context.

The author has included in the volume over 100 maps and line drawings selected from his collection accumulated over 30 years as a university lecturer and researcher of urban geography and the Chinese city. They provide vivid and readily apprehensible illustrations for illuminating key points on the structure of the Chinese city and the geopolitical situation of China in major historical periods. They also add exquisite detail through graphic techniques to the textual treatment of the subject matters, and are in themselves visually appealing, adding unique dimension to the volume.

The volume targets a wide spectrum of readers, and will appeal to anyone interested in the culture and civilization, cities, urban planning and economic, philosophical, political and historical developments of China.

Readership: Student, professional and general public interested in China's geography, history, culture and society.



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Hardcover: 236pp
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978-981-4287-82-1
US$27.95 / £18

HOW TO MANAGE A SUCCESSFUL BUSINESS IN CHINA

by **Johan Björkstén** *(Founder of the Chinese PR Agency Eastwei Relations)* &
Anders Hägglund *(Former President of Sandvik China)*

This unique book discusses how to manage an organization in China. It is based on the invaluable practical experience of entrepreneur Johan Björkstén, who successfully built a local consulting business with over 100 employees, and Anders Hägglund, a seasoned manager who set up high-growth and highly profitable operations in China for a major industrial multinational. The book provides widely applicable advice based on experiences from different industries, including but not limited to those of the authors.

Most books about business in China belong to one of two categories: autobiographical "success stories" or academic treatises. Managing in China goes beyond these genres to provide highly relevant, practical advice and checklists, as well as concrete and illustrative examples from the authors' own experience. Managing in China succinctly explains how historical, cultural and social factors influence today's Chinese business environment, and how managers should take this into account in day-to-day operations.

The book focuses on managing in a rapid-growth environment, but also provides advice on how to ensure sustainable operations and profitability in mature industries or a temporary downturn.

Readership: Academics, students, general readers interested in China studies, China's economy, business and management and entrepreneurship.

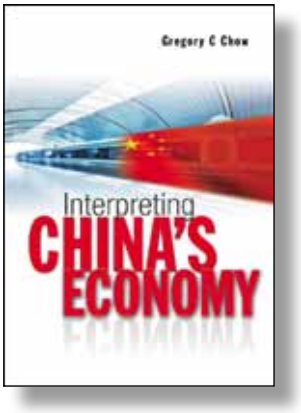
INTERPRETING CHINA'S ECONOMY

by **Gregory C Chow** *(Princeton University, USA)*

This book is unique in covering all important topics of the Chinese economy in depth but written in a language understandable to the layman and yet challenging to the expert. Beginning with entrepreneurship that propels the dynamic economic changes in China today, the book is organized into four broad parts to discuss China's economic development, to analyze significant economic issues, to recommend economic policies and to comment on the timely economic issues in the American economy for comparison.

Unlike a textbook, the discussion is original and thought-provoking. It is written by a most distinguished economist who has studied the Chinese economy for thirty years, after making breathtaking contributions to the fields of econometrics, applied economics and dynamic economics and serving as a major adviser to the government of Taiwan during its period of rapid development in the 1960s and 1970s. In the last thirty years, the author has served as a major adviser to the government of China on economic reform and important economic policies and cooperated with the Ministry of Education to introduce and promote the development of modern economics in China, including training hundreds of economists in China and placing many graduate students to pursue a doctoral degrees in economics in leading universities in the US and Canada. These graduates now plays pivotal roles in China and in the US in academics, business or government institutions. The essays, a culmination of the author's expertise in China over five decades, are being widely read in China. When the author became professor emeritus at Princeton, the University named the Econometric Research Program as the Gregory C Chow Econometric Research Program in his honor.

Readership: General readers, academics, professionals interested in China's economy.



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

Hardcover: 300pp
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978-981-4317-94-8
US$54 / £36

UNLOCKING THE ENTERPRISER INSIDE!

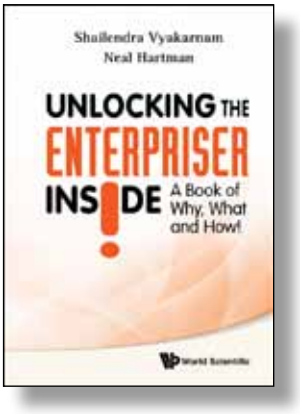
A Book of Why, What and How!

by **Shailendra Vyakarnam** *(University of Cambridge, UK)* &
Neal Hartman *(MIT Sloan School of Management, USA)*

This 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.



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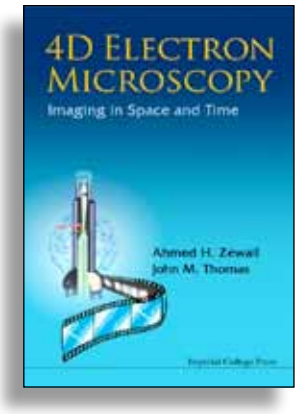

Rights Information:
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US$88 / £66

Paperback: 360pp
978-1-84816-400-0(pbk)
US$48 / £36

4D ELECTRON MICROSCOPY

Imaging in Space and Time

by **Ahmed H Zewail** *(California Institute of Technology, USA)* &
John M Thomas *(University of Cambridge, UK)*

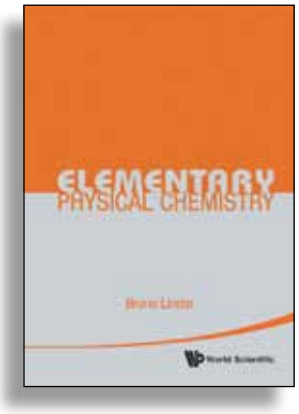
The modern electron microscope, as a result of recent revolutionary developments and many evolutionary ones, now yields a wealth of quantitative knowledge pertaining to structure, dynamics, and function barely matched by any other single scientific instrument. It is also poised to contribute much new spatially-resolved and time-resolved insights of central importance in the exploration of most aspects of condensed matter, ranging from the physical to the biological sciences.

Whereas in all conventional EM methods, imaging, diffraction, and chemical analyses have been conducted in a static — time-integrated — manner, now it has become possible to unite the time domain with the spatial one, thereby creating four-dimensional (4D) electron microscopy. This advance is based on the fundamental concept of timed, coherent single-electron packets, or electron pulses, which are liberated with femtosecond durations. Structural phase transitions, mechanical deformations, and the embryonic stages of melting and crystallization are examples of phenomena that can now be imaged in unprecedented structural detail with high spatial resolution, and ten orders of magnitude as fast as hitherto.

No monograph in existence attempts to cover the revolutionary dimensions that EM in its various modes of operation nowadays makes possible. The authors of this book chart these developments, and also compare the merits of coherent electron waves with those of synchrotron radiation. They judge it prudent to recall some important basic procedural and theoretical aspects of imaging and diffraction so that the reader may better comprehend the significance of the new vistas and applications now afoot.

This book is not a *vade mecum* — numerous other texts are available for the practitioner for that purpose. It is instead an in-depth exposé of the paradigm concepts and the developed techniques that can now be executed to gain new knowledge in the entire domain of biological and physical science, and in the four dimensions of *space* and *time*.

Readership: Academics and researchers in the fields of physical chemistry, chemical analysis, solid state physics, electron microscopy, scanning, tunnelling, nanoelectronics, molecular biology, molecular imaging and structural biology.



Rights Information:
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Hardcover: 200pp (approx.)
Pub. date: Sep 2010
978-981-4299-66-4
US$54 / £37

ELEMENTARY PHYSICAL CHEMISTRY

by **Bruno Linder** *(Florida State University, USA)*

This book is designed for a one-semester course, for undergraduates, not necessarily chemistry majors, who need to know something about physical chemistry. The emphasis is not on mathematical rigor, but subtleties and conceptual difficulties are not hidden. It covers the essential topics in physical chemistry, including the state of matter, thermodynamics, chemical kinetics, phase and chemical equilibria, introduction to quantum theory, and molecular spectroscopy.

Readership: Undergraduates including chemistry and non-chemistry majors, who need or want to study physical chemistry but have limited time.

INVITATION TO PHYSICAL CHEMISTRY

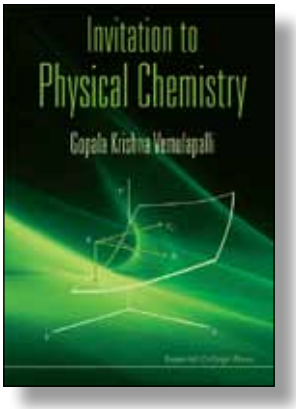
(With CD-ROM)

With CD-ROM

by **Gopala Krishna Vemulapalli** *(University of Arizona, USA)*

This is a unique book with a different aim from other books on the subject. The idea is to provide readers with the "big picture" first, yet at a level that helps further the study of physical chemistry. The text covers all the important topics in physical chemistry — thermodynamics, statistical thermodynamics, quantum chemistry, and chemical kinetics — staying rigorously close to the basic theory, using appropriate mathematics but avoiding long derivations. Moreover, the book is supplemented by a CD-ROM to make it more comprehensive, interactive and useful for a wider audience. The CD-ROM contains examples, extended discussion, exercises and details of important derivations to reinforce understanding of physical chemistry.

Readership: Instructors and students in chemistry and materials science, and readers interested in important ideas in physical science.



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Hardcover: 240pp
Pub. date: Mar 2010
978-1-84816-301-0
US$54 / £37

MATERIALS, MATTER AND PARTICLES

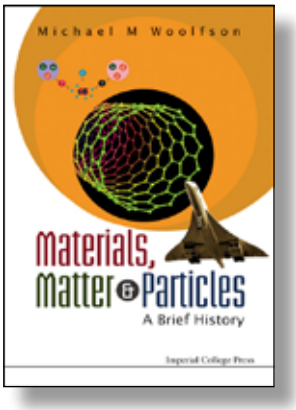
A Brief History

by **Michael M Woolfson** *(University of York, UK)*

This book traces the history of ideas about the nature of matter and also the way that mankind has used material resources that the world offers. Starting with the ideas of ancient civilizations that air, earth, fire and water were the basic ingredients of all matter, it traces the development of the science of chemistry beginning within the ranks of the alchemists. First, the idea of elements grew and then the atomic nature of matter was verified. Physicists had entered the scene, showing the nature of atoms in terms of fundamental particles and then introducing the concept of wave-particle duality that altered the basic concepts of what matter was. Finally the physicists discovered a panoply of fundamental particles, some observed within atom-smashing machines and the existence of others merely postulated.

In parallel with the above there is a description of various kinds of matter as it affects everyday life — including the nature of matter associated with life itself. The way that early man used the materials directly given by nature, such as stone, wood and animal skins, is followed by the use of materials requiring some process to be employed — e.g. metals which include bronze and also concrete. Some important modern materials are discussed, such as synthetic fibres and plastics and semiconductors, and potentially important future products from new developments in nanotechnology.

Readership: Accessible to a wide audience including the educated layperson and undergraduates taking science as a subsidiary subject.



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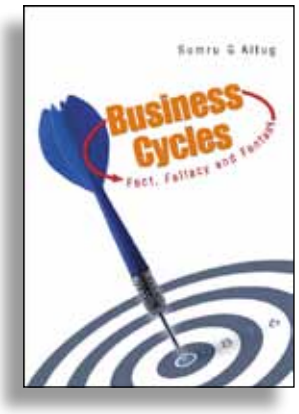

BUSINESS CYCLES

Fact, Fallacy and Fantasy

by **Sumru G Altug** *(Koç University, Turkey & Centre for Economic Policy Research, UK)*

This book provides an overview of the modern theory and empirics of business cycles. Written by one of the pioneering authors in this field, it examines the notion of a business cycle and discusses alternative approaches to modeling. Arguably, one of the most important debates in this literature has been the issue of "matching" a business cycle to the data. In their original contribution, Kydland and Prescott (1982) proposed the method of calibration as a way of examining the implications of a business cycle model; yet, even at its inception, this approach came under criticism from a variety of sources. This monograph will examine some of these criticisms and discuss alternative approaches that have been put forward. More generally, it will discuss what lies ahead for modern business cycle theory.

Readership: Academic economists; graduate students interested in business cycle theory; policymakers.

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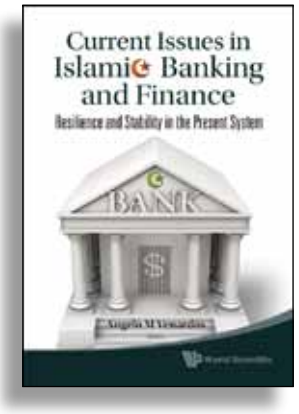
978-981-283-276-4
US$65 / £35



CURRENT ISSUES IN ISLAMIC BANKING AND FINANCE

Resilience and Stability in the Present System

edited by **Angelo M Venardos** *(Heritage Trust Group, Singapore)*

The phenomenal worldwide development over the past decade of Islamic banking and finance is drawing much attention to Southeast Asia, which, on the platform of its own economic growth success, is also proving to be the gateway for Middle Eastern petrodollar investments into the two great emerging markets of India and China.

This book provides a timely examination of the issues confronting this US$300–US$500 billion market growing at 15%–20% per annum, with reviews of the different financial markets, be they capital (Sukuk), retail or wealth management. It further includes reviews from the various jurisdictions including Malaysia (the front-runner), Singapore (the regional financial hub), Brunei (an offshore Islamic market player) and the sleeping giant, Indonesia, as well as newly emerging participants such as Japan and the United States. Contributors, all well-known leading practitioners in their fields, range from lawyers, accountants, bankers and educators to policy advisors, and come from institutions such as CIMB, Kuwait Finance House, OCBC Bank and PricewaterhouseCoopers, among others.

This book, the first of its kind, will be of great benefit to those seeking to better understand current developments and issues affecting Islamic banking in South East Asia, from both global and regional perspectives.

Readership: Lawyers, accountants, bankers, regulators, policy advisors, academics, and upper-level undergraduate and graduate students in Islamic studies, banking and finance.

Rights Information:
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Hardcover: 328pp
Pub. date: Mar 2010
978-981-283-392-1
US$68 / £45

GLOBAL DERIVATIVE DEBACLES

From Theory to Malpractice

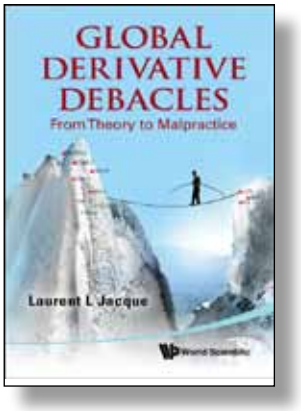
by **Laurent L Jacque** *(Tufts University, USA & HEC School of Management, France)*

This book analyzes in depth all major derivatives debacles of the last half century including the multi-billion losses and/or bankruptcy of Metallgesellschaft (1994), Barings Bank (1995), Long Term Capital Management (1998), Amaranth (2006), Société Générale (2008) and AIG (2008). It unlocks the secrets of derivatives by telling the stories of institutions which played in the derivative market and lost big. For some of these unfortunate organizations it was daring but flawed financial engineering which brought them havoc. For others it was unbridled speculation perpetrated by rogue traders whose unchecked fraud brought their house down.

Should derivatives be feared "*as financial weapons of mass destruction"* or hailed as financial innovations which through efficient risk transfer are truly adding to the *Wealth of Nations*? By presenting a factual analysis of how the malpractice of derivatives played havoc with derivative end-user and dealer institutions, a case is made for vigilance not only to market and counter-party risk but also operational risk in their use for risk management and proprietary trading. Clear and recurring lessons across the different stories call not only for tighter but also "smarter" control system of derivatives trading and should be of immediate interest to financial managers, bankers, traders, auditors and regulators who are directly or indirectly exposed to financial derivatives.

The book groups cases by derivative category, starting with the simplest and building up to the most complex — namely, Forwards, Futures, Options and Swaps in that order, with applications in commodities, foreign exchange, stock indices and interest rates. Each chapter deals with one derivative debacle, providing a rigorous and comprehensive but non-technical elucidation of what happened.

Readership: Economists; undergraduates and graduates majoring in finance, economics and business administration; professionals, financial managers and CPAs in the financial service industry.



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Hardcover: 336pp
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978-981-283-770-7
US$54 / £36

INTERNATIONAL FINANCE AND OPEN-ECONOMY MACROECONOMICS

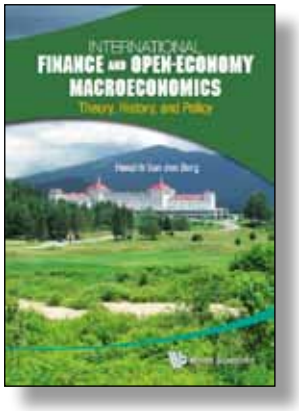
Theory, History, and Policy

by **Hendrik Van den Berg** *(University of Nebraska-Lincoln, USA)*

This historically-based textbook on international finance and open-economy macroeconomics provides a complete course on the theory and policies that shaped our international financial system. Utilizing the 1944 Bretton Woods Conference as a unifying theme, the book covers all the standard topics of international finance, such as foreign exchange markets, balance of payments accounting, macroeconomic policy in an open economy, exchange rate crises, multinational enterprises, international banking, and the evolution of our international financial system. The detailed international financial theory is presented in a lively manner that reflects the close relationship between actual world events and the development of economic thought.

The book also analyzes the causes of the 2008 international financial crisis and recession, encourages critical thinking about whether the current international financial system promotes human well-being, and concludes with a discussion on whether it is time to summon the world's financial leaders to another Bretton Woods Conference. In additional to providing students with a solid understanding of international finance and open-economy macroeconomics, the book is written in a reader-friendly style that makes it a good reference for anyone interested in the many fascinating issues related to our still-evolving global financial system and, more generally, our global economy.

Readership: Undergraduate and graduate students in international finance; students in international economics; economists, financial industry professionals and government officials.



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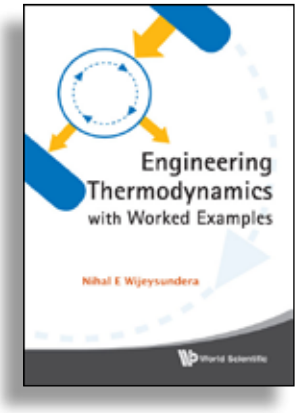
US$88 / £61



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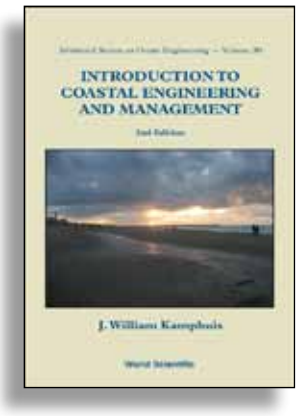
US$78 / £51

ENGINEERING THERMODYNAMICS WITH WORKED EXAMPLES

by **Nihal E Wijeysundera** *(National University of Singapore)*

The book includes all the subject matter covered in a typical undergraduate course in engineering thermodynamics. It includes 20 to 25 worked examples for each chapter, carefully chosen to expose students to diverse applications of engineering thermodynamics. Each worked example is designed to be representative of a class of physical problems. At the end of each chapter, there are an additional 10 to 15 problems for which numerical answers are provided.

Readership: Undergraduate and graduate students in mechanical engineering, chemical engineering, civil engineering, electrical & electronic engineering, bioengineering, applied physics and thermodynamics.



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US$58 / £36

INTRODUCTION TO COASTAL ENGINEERING AND MANAGEMENT

(2nd Edition)

by **J William Kamphuis** *(Queen's University, Canada)*

This book is based on the author's 34 years of experience as a teacher/researcher of coastal engineering and management and on recent reflections on newly relevant issues, such as consequences of failure, impacts of rising sea levels, aging infrastructure, real estate development, and contemporary decision making, design and education.

This textbook for undergraduate students, postgraduate students and practicing engineers covers waves, structures, sediment movement, coastal management, and contemporary coastal design and decision making, presenting both basic principles and engineering solutions. It discusses the traditional methods of analysis and synthesis (design), but also contemporary design taking into account environmental impacts, consequences of failure, and current concerns such as global warming, aging infrastructure, working with stakeholder groups, regulators, etc.

This second edition expands greatly on the topics of failure and resilience that surfaced as a result of recent disasters from hurricane surges and tsunamis. It updates the discussion of design and decision making in the 21st century, with many new examples presented.

Readership: Undergraduate and graduate students, researchers and academics in coastal engineering and management.

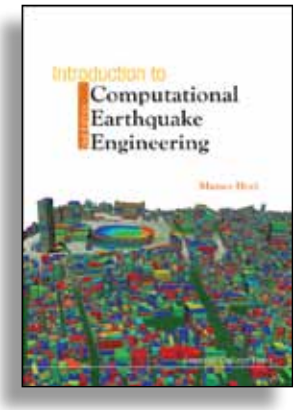
INTRODUCTION TO COMPUTATIONAL EARTHQUAKE ENGINEERING

(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.



Rights Information:
Non-English language rights available.

Hardcover: 350pp (approx.)
Pub. date: Oct 2010
978-1-84816-397-3
US$111 / £76

Paperback: 350pp (approx.)
978-1-84816-398-0(pbk)
US$73 / £51

RANDOM SEAS AND DESIGN OF MARITIME STRUCTURES

(3rd Edition)

by **Yoshimi Goda** *(Yokohama National University, Japan)*

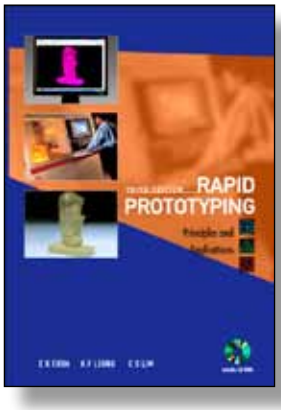
Random waves are the most important constituent of the sea environment, as they make the design of maritime structures quite different from that of structures on land. In this book, the concept of random waves for the design of breakwaters, seawalls, and harbor structures is fully explored for easy comprehension by practicing engineers. Theoretical aspects are also discussed in detail for further studies by graduate students and researchers.

Readership: Advanced undergraduate and graduate students, and practitioners in coastal and harbor engineering.

Rights Information:
Non-English language rights available.

Hardcover: 732pp
Pub. date: Jun 2010
978-981-4282-39-0
US$160 / £99

Paperback: 732pp
978-981-4282-40-6(pbk)
US$78 / £48



RAPID PROTOTYPING

Principles and Applications
(Third Edition) (with CD-ROM)

With CD-ROM

by **C K Chua** *(Nanyang Technological University, Singapore)*, **K F Leong** *(Nanyang Technological University, Singapore)* & **C S Lim** *(Nanyang Technological University, Singapore)*

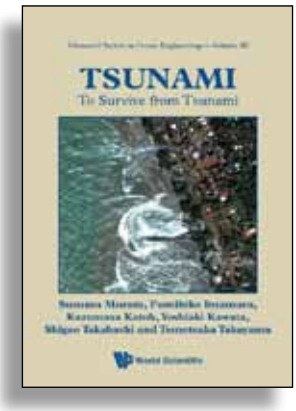
Rapid prototyping (RP) has revolutionized how prototypes are made and small batch manufacturing is carried out. With rapid prototyping, the strategies used to produce a part change a number of important considerations and limitations previously faced by tool designers and engineers. Now in its third edition, this textbook is still the definitive text on RP. It covers the key RP processes, the available models and specifications, and their principles, materials, advantages and disadvantages. Examples of application areas in design, planning, manufacturing, biomedical engineering, art and architecture are also given. The book includes several related problems so that the reader can test his or her understanding of the topics. New to this edition, the included CD-ROM presents animated illustrations of the working principles of today's key RP processes.

Readership: Diploma and advanced diploma students, undergraduates, postgraduates, consultants, academics and professionals in mechanical and industrial engineering.

Rights Information:
Non-English language rights available.

Hardcover: 540pp
Pub. date: Jan 2010
978-981-277-897-0
US$96 / £63

Paperback: 540pp
978-981-277-898-7(pbk)
US$69 / £46



TSUNAMI

To Survive from Tsunami

by **Susumu Murata** *(Coastal Development Institute of Technology, Japan)*, **Fumihiko Imamura** *(Tohoku University, Japan)*, **Kazumasa Katoh** *(Musashi Institute of Technology, Japan)*, **Yoshiaki Kawata** *(Kyoto University, Japan)*, **Shigeo Tahashi** *(Port and Airport Research Institute, Japan)* & **Tomotsuka Takayama** *(Kyoto University, Japan)*

This book provides comprehensive scientific information and knowledge survival tips on how to survive a tsunami. It is especially useful to those living (or about to live) in tsunami-prone areas, and to travelers who may visit such areas. The book is composed of two parts: the first consisting of three chapters on how to survive a tsunami by (i) describing precious lessons obtained from actual tsunami disasters, (ii) imparting fundamental knowledge of tsunami science for survival, and (iii) listing measures for tsunami disaster mitigation. The second part provides more detailed scientific knowledge on tsunamis and consists two chapters: one describes tsunami occurrence mechanism and near-shore behavior; the other mentions numerical simulation and tsunami forecasting. This book has been awarded the 2009 Book of the Year Award by the Japan Society of Civil Engineers.

Readership: Undergraduates and graduates interested in tsunamis, tsunami mitigation planners, oceanographers and physicists, especially residents in tsunami prone areas.

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

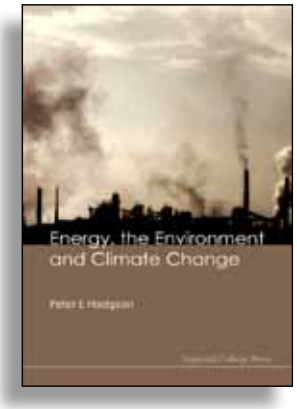
Hardcover: 316pp
Pub. date: Oct 2009
978-981-4277-47-1
US$48 / £36

ENERGY, THE ENVIRONMENT AND CLIMATE CHANGE

by **Peter E Hodgson** *(University of Oxford, UK)*

This book is a comprehensive account of all significant energy sources, evaluated according to their capacity, reliability, cost, safety and effects on the environment. Non-renewable sources (for example, coal, oil, gas and nuclear fuel) together with renewable sources like wood, hydro, biomass, wind, solar, geothermal, ocean thermal, and tidal; are considered. Also, nuclear radiations and the disposal of nuclear waste and the future of nuclear power are assessed, as well as pollution and acid rain, the greenhouse effects and climate change. Its social, political and moral problems are discussed, with a special mention of the opposition to nuclear power.

Readership: Graduate students, academics, practitioners and general public interested in the field of energy research, pollution, meteorology and waste management.



Rights Information:
Non-English language rights available.

Hardcover: 224pp
Pub. date: Mar 2010
978-1-84816-415-4
US$88 / £61

ARTS: A SCIENCE MATTER

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

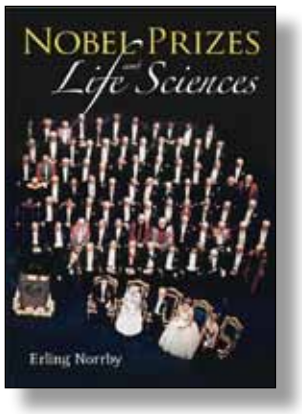
This book treats arts as part of science, from the unified perspective of Science Matters. It contains 17 chapters, with 18 contributors who are prominent humanists, professional artists, or scientists. It consists of three parts: Part I: Philosophy and History of Arts; Part II: Arts in Action; Part 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 Iam (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:
Non-English language rights available.

Hardcover: 400pp
Pub. date: Oct 2010
978-981-4324-93-9
US$78 / £48



NOBEL PRIZES AND LIFE SCIENCES

by **Erling Norrby** *(The Royal Swedish Academy of Sciences, Sweden)*

The Nobel Prizes in natural sciences have developed to become a unique measure of scientific excellence. Using archival documents, which have been released (50 years secrecy) for scholarly work, the author expertly traces the strengths and weaknesses of the Nobel system as exemplified by individual prizes. Surveys of the more than 100 years that the Prizes have been awarded are also presented.

This book discusses the most important prize in the world of science and gives unique historical insights into how the laureate selection process has developed to secure optimal choice.

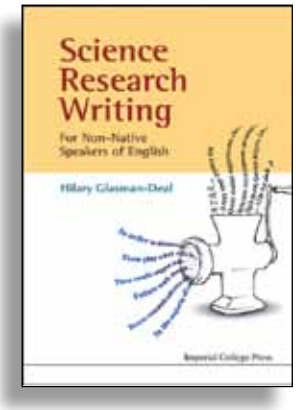
No other book has been published which draws from previously classified archival materials to the extent that this book does. It indirectly deals with factors that foster scientific discoveries viz. the role of both individuals and institutions and thus provides invaluable insights for researchers, institutions and anyone interested in science.

Readership: General.

Rights Information:
Non-English language rights available.

Hardcover: 300pp (approx.)
Pub. date: Aug 2010
978-981-4299-36-7
US$68 / £45

Paperback: 300pp (approx.)
978-981-4299-37-4(pbk)
US$38 / £25



SCIENCE RESEARCH WRITING FOR NON-NATIVE SPEAKERS OF ENGLISH

by **Hilary Glasman-Deal** *(Imperial College London, UK)*

This book is designed to enable non-native English speakers to write science research for publication in English. It can also be used by English speakers and is a practical, user-friendly book intended as a fast, do-it-yourself guide for those whose English language proficiency is above intermediate. The approach is based on material developed from teaching graduate students at Imperial College London and has been extensively piloted. The book guides the reader through the process of writing science research and will also help with writing a Master's or Doctoral thesis in English.

Science writing is much easier than it looks because the structure and language are conventional. The aim of this book is to help the reader discover a template or model for science research writing and then to provide the grammar and vocabulary tools needed to operate that model. There are five units: Introduction, Methodology, Results, Discussion/Conclusion and Abstract. The reader develops a model for each section of the research article through sample texts and exercises; this is followed by a Grammar and Writing Skills section designed to respond to frequently-asked questions as well as a Vocabulary list including examples of how the words and phrases are to be used.

Readership: Non-native and overseas science, engineering, technology and medical professionals including graduate students, academics, researchers or industrial scientists interested in publishing in English science journals; English language professionals at universities and colleges worldwide (including English-speaking countries) who provide writing support to students and staff whose first language is not English.

Rights Information:
Non-English language **(except Simplified Chinese and Korean)** rights available.

Hardcover: 272pp
Pub. date: Dec 2009
978-1-84816-309-6
US$58 / £44

Paperback: 272pp
978-1-84816-310-2(pbk)
US$25 / £19

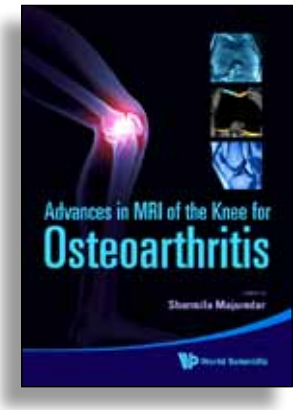
ADVANCES IN MRI OF THE KNEE FOR OSTEOARTHRITIS

edited by **Sharmila Majumdar** *(University of California, San Francisco, USA)*

Osteoarthritis is a condition in which low-grade inflammation results in joint pain, and it is the most common joint disease. Interactions between all of the major joint tissues, including the articular cartilage, synovium, bone marrow, subchondral bone, trabecular bone, and muscle, have been implicated in osteoarthritis. Magnetic resonance images have been used to quantify the cartilage morphology, volume and thickness, and focal defects, and may reflect changes in the biochemical composition of articular cartilage.

This book brings together contributions from key investigators in the area of magnetic resonance imaging (MRI) for osteoarthritis of the knee. Written by a multidisciplinary group of scientists, engineers, and clinicians, this book is the first to cover MRI as a new emerging modality for the diagnosis of osteoarthritis, and presents new findings in both basic and clinical science research.

Readership: Undergraduate and graduate students in radiology as well as practicing radiologists; experts in the field of musculoskeletal, osteoarthritis, and magnetic resonance research.



Rights Information:
Non-English language rights available.

Hardcover: 284pp
Pub. date: Mar 2010
978-981-4271-70-7
US$96 / £66

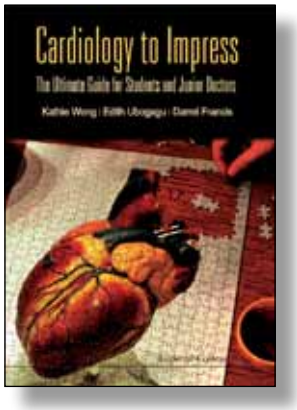
CARDIOLOGY TO IMPRESS

The Ultimate Guide for Students and Junior Doctors

by **Kathie Wong** *(Imperial College London, UK)*, **Edith Ubogagu** *(Imperial College London, UK)* & **Darrel Francis** *(Imperial College London, UK)*

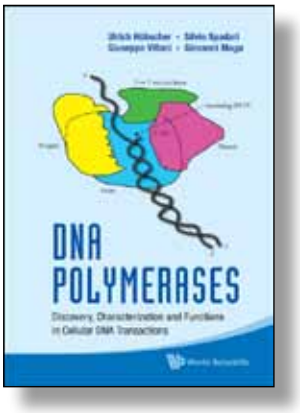
Cardiology to Impress is the ultimate guidebook for medical students preparing for the clinical experience. It is written in collaboration with top teaching consultants and newly qualified doctors who are familiar with the pitfalls of clinical attachments, and understand the fears and apprehensions when students are thrown into difficult exams and the hospital setting. This pocket-size handbook specifically outlines what medical students are to expect, and what is expected of them in clinics, theatres and in exam settings. It teaches how to be competent in front of senior doctors and provides useful tips on how to answer questions on ward rounds. This book does not mindlessly regurgitate facts, rather it tailors the facts to the clinical setting, thus bridging the gap between textbook knowledge and clinical practice in a way that enables the student to understand, and appreciate the clinical relevance of medical knowledge.

Readership: Both UK and non-UK medical students, allied health professionals in cardiology, including nurses, technicians, and pharmacists.



Rights Information:
Non-English language rights available.

Paperback: 288pp
Pub. date: May 2010
978-1-84816-538-0(pbk)
US$49 / £33



Rights Information:
Non-English language rights available.

Hardcover: 340pp
Pub. date: Apr 2010
978-981-4299-16-9
US$111 / £76

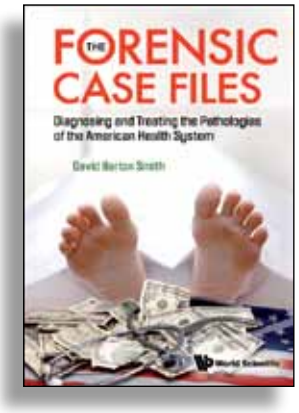
DNA POLYMERASES

Discovery, Characterization and Functions in Cellular DNA Transactions

by **Ulrich Hübscher** *(University of Zurich, Switzerland),* **Silvio Spadari** *(Institute of Molecular Genetics IGM-CNR, Italy),* **Giuseppe Villani** *(CNRS-Université Paul Sabatier, Toulouse, France)* & **Giovanni Maga** *(Institute of Molecular Genetics IGM-CNR, Italy)*

Maintenance of the information embedded in the genomic DNA sequence is essential for life. DNA polymerases play pivotal roles in the complex processes that maintain genetic integrity. Besides their tasks *in vivo*, DNA polymerases are the workhorses in numerous biotechnology applications such as the polymerase chain reaction (PCR), cDNA cloning, genome sequencing, nucleic acids-based diagnostics and in techniques to analyze ancient and otherwise damaged DNA. Moreover, some diseases are related to DNA polymerase defects, and chemotherapy through inhibition of DNA polymerases is used to fight HIV, Herpes and Hepatitis B and C infections. We have recently witnessed the discovery of an abundance of novel DNA polymerases in viruses, bacteria, archaea and eukaryotes with specialized properties whose physiological functions are only beginning to be understood. This book summarizes the current knowledge of these fascinating enzymes. It is intended for a wide audience from basic scientists, to diagnostic laboratories and to clinicians who seek a better understanding of these fascinating enzymes.

Readership: Researchers studying DNA, cell biologists, molecular biologists, graduates in molecular biology, medical doctors and other professionals interested in diagnostic and clinical medicine.



Rights Information:
Non-English language rights available.

Hardcover: 216pp
Pub. date: Nov 2009
978-981-283-837-7
US$70 / £48

THE FORENSIC CASE FILES

Diagnosing and Treating the Pathologies of the American Health System

by **David Barton Smith** *(Drexel University, USA)*

This book provides unique insights into the current heated healthcare reform debate in the United States and the expanding US$2 trillion industry that is the focus of public concern. The author's extensive experience as an educator, consultant, researcher and author of five well-received books on that system provides a unique resource of largely unreported cases to mine. These vivid case studies weave the history, richness and complexity of the problems faced by patients and service providers into fascinating Byzantine intrigues. They illustrate the underlying structural problems that have produced disparities in treatment, escalating costs, unsafe and inadequate care, the demoralization of the many decent and committed people who work within the system and passionate calls for reform. Highly readable, the book also offers a candor and richness in detail that is typically lacking in textbooks, academic journal articles and the popular press.

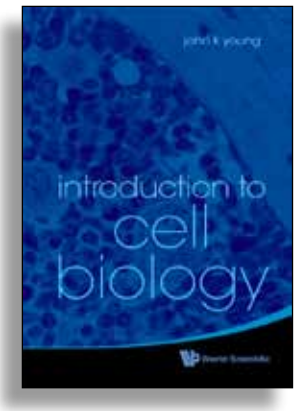
Readership: Written to provide essential background for the general reader on the current health care reform debate, it should be required reading for health care professionals, health care managers, and health care policymakers. It will also serve as an essential supplementary text for upper-level undergraduate courses in health policy and for introductory graduate health systems management and policy courses for those planning to enter careers in the health sector.

INTRODUCTION TO CELL BIOLOGY

by **John K Young** *(Howard University, USA)*

This book is intended to be an accessible introduction to the cell biology of mammalian cells for junior or senior undergraduate students who have already had an introduction to biological sciences. This engaging and stimulating text focuses on current controversies in cell biology. To solve these puzzles, the reader will learn how to answer a number of fundamental yet hard-hitting questions in the field. He or she is thus able to approach the subject with the right scientific attitude and build a firm foundation of understanding. Basic features of mammalian cells — secretion, division, motility, cell-cell interactions — are described using up-to-date references to the most current scientific literature. The text is well illustrated with clearly understandable diagrams and numerous micrographs of cells. This text will enable non-specialists to acquire a better understanding of current issues in mammalian cell biology.

Readership: Junior or senior undergraduate students in biology.



Rights Information:
Non-English language rights available.

Hardcover: 232pp
Pub. date: Jul 2010
978-981-4307-31-4
US$78 / £51

Paperback: 232pp
978-981-4307-32-1(pbk)
US$38 / £25

THE KNEE

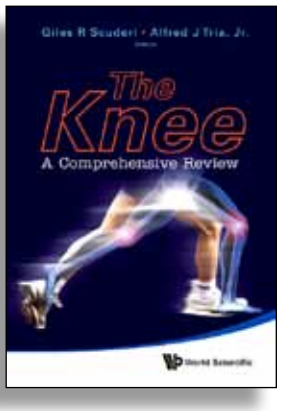
A Comprehensive Review

edited by **Giles R Scuderi** *(Insall Scott Kelly Institute, USA)* &
Alfred J Tria, Jr *(Robert Wood Johnson Medical School, USA)*

This book covers all the basics of the knee for practicing orthopedic surgeons and residents who are finishing their training and preparing for the board examinations. The text begins with chapters on the anatomy, physical examinations, and imaging, before proceeding on to pediatric considerations, arthroscopic techniques, ligament injuries, trauma, reconstructions, and the future of knee replacement surgery.

There are many textbooks on the knee but no recent one has addressed the entire area of the knee from start to finish.

Readership: Orthopedic surgeons and residents in orthopedic surgery.



Rights Information:
Non-English language rights available.

Hardcover: 620pp
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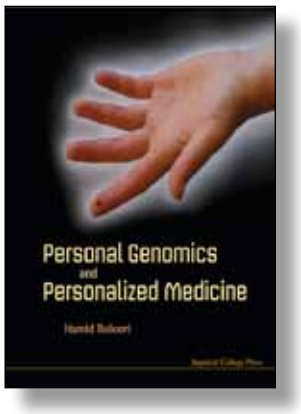
978-981-4282-03-1
US$201 / £138



Rights Information:
Non-English language rights available.

Hardcover: 272pp
Pub. date: Dec 2009
978-1-84816-564-9
US$68 / £51

PERSONAL GENOMICS AND PERSONALIZED MEDICINE

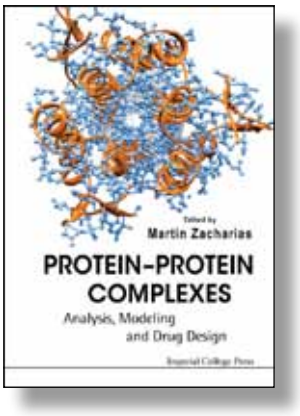
by **Hamid Bolouri** *(California Institute of Technology, USA)*

Current research in genomics and pharmacogenomics is increasingly highlighting the need to move towards stratified disease descriptions and individualized treatment plans. This book explains how a confluence of recent biological, technological and methodological developments is making it possible to provide personalized diagnoses and treatments.

By virtue of treating each person's condition as unique, personal genomics and personalized medicine require health professionals to understand the nature of the data, its health implications, and its limitations.

This book provides a detailed scientific treatment of the emerging disciplines of personal genomics and personalized medicine. It also includes a comprehensive treatment of both the promises and challenges of personal genomics and medicine from technological, societal and medical perspectives. It offers a wide-ranging review of the state of the art across all aspects of a highly multi-disciplinary subject. This book will be immensely useful for practicing health professionals and researchers, as well as senior undergraduates and graduate students in biomedical sciences.

Readership: Practicing health professionals and researchers as well as senior undergraduates and graduate students in biomedical sciences.



Rights Information:
Non-English language rights available.

Hardcover: 400pp
Pub. date: May 2010
978-1-84816-338-6
US$133 / £92

PROTEIN-PROTEIN COMPLEXES

Analysis, Modeling and Drug Design

edited by **Martin Zacharias** *(Technische Universität München, Germany)*

Given the immense progress achieved in elucidating protein–protein complex structures and in the field of protein interaction modeling, there is great demand for a book that gives interested researchers/students a comprehensive overview of the field. This book does just that. It focuses on what can be learned about protein–protein interactions from the analysis of protein–protein complex structures and interfaces. What are the driving forces for protein–protein association? How can we extract the mechanism of specific recognition from studying protein–protein interfaces? How can this knowledge be used to predict and design protein–protein interactions (interaction regions and complex structures)? What methods are currently employed to design protein–protein interactions, and how can we influence protein–protein interactions by mutagenesis and small-molecule drugs or peptide mimetics?

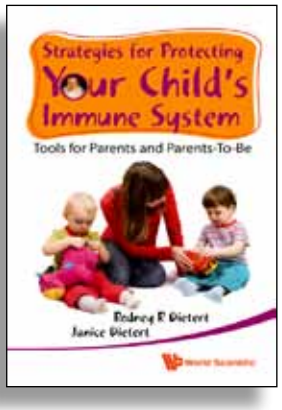
The book consists of about 15 review chapters, written by experts, on the characterization of protein–protein interfaces, structure determination of protein complexes (by NMR and X-ray), theory of protein–protein binding, dynamics of protein interfaces, bioinformatics methods to predict interaction regions, and prediction of protein–protein complex structures (docking and homology modeling of complexes, etc.) and design of protein–protein interactions. It serves as a bridge between studying/analyzing protein–protein complex structures (interfaces), predicting interactions, and influencing/designing interactions.

Readership: Graduate students and researchers in bioinformatics and computational biology, biophysics, biochemistry, structural biology, and drug design.

STRATEGIES FOR PROTECTING YOUR CHILD'S IMMUNE SYSTEM

Tools for Parents and Parents-To-Be

by **Rodney R Dietert** (Cornell University, USA) &
Janice Dietert (Performance Plus Consulting, USA)



Strategies for Protecting Your Child's Immune System is the first book to focus on prevention of environmental damage to the immune system of embryos, babies and older children. It provides expecting and existing parents, their families and physicians with science-based information to protect and proactively manage their child's immune system. Environmental exposures (pollutants, allergens, drugs, diet, physical factors) in the home, school and community can damage the developing immune system and increase the risk of lifelong chronic diseases such as allergies, asthma, type 1 diabetes, celiac disease and neurological problems. This book imparts specific tools to parents and their physicians to help keep the early-life immune system out of harm's way and minimize environmental health risk.

Readership: Parents, family members, pediatricians, obstetricians and gynecologists, nutritionists, family doctors, complementary health providers, teachers, college and medical students, and general readers.

Rights Information:
Non-English language rights available.

Paperback: 300pp
Pub. date: Mar 2010
978-981-4287-09-8(pbk)
US$19.95 / £13

TISSUE ENGINEERING FOR THE HAND

Research Advances and Clinical Applications

edited by **James Chang** *(Stanford University, USA)* &
Gaurav Gupta *(Stanford University, USA)*

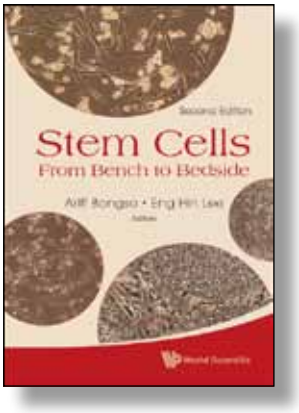
Musculoskeletal applications of tissue engineering will be among the first to achieve widespread clinical use, and the resulting shift in clinical and surgical paradigms will highlight the need for an authoritative text on tissue engineering for musculoskeletal tissues including nerve, bone, tendon, skin, vessels, and cartilage. This book will serve the needs of a large readership including plastic surgeons, orthopedic surgeons, medical residents and medical students, researchers and academic faculty in regenerative medicine and biomedical engineering, and medical device experts. This textbook will serve as the curriculum for undergraduate and graduate courses in biomedical engineering and surgery.

Notable contributors to this volume include Antonios G Mikos, PhD; Wei Liu, MD; Yilin Cao, MD; Mark Randolph, MAS; Jennifer Elisseeff, PhD; Geoffrey C Gurtner, MD; Michael T Longaker, MD; and James Chang, MD, all of whom are leaders in tissue engineering research and applications.

Readership: Advanced undergraduates and graduates in tissue engineering, research scientists in tissue engineering, hand surgeons, surgical researchers, surgical residents and fellows.

Rights Information:
Non-English language rights available.

Hardcover: 400pp (approx.)
Pub. date: Sep 2010
978-981-4313-55-1
US$135 / £93



Rights Information:
Non-English language rights available.

Hardcover: 650pp (approx.)
Pub. date: Sep 2010
978-981-4289-38-2
US$186 / £128

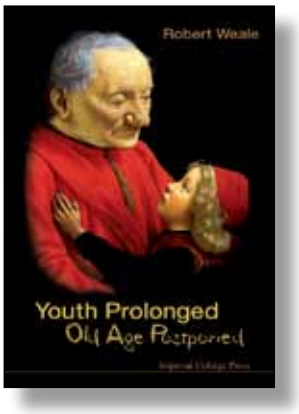
STEM CELLS

From Bench to Bedside
(2nd Edition)
edited by **Ariff Bongso** *(National University of Singapore)* &
Eng Hin Lee *(National University of Singapore)*

Stem 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



Rights Information:
Non-English language rights available.

Paperback: 148pp
Pub. date: Nov 2009
978-1-84816-507-6(pbk)
US$24.95 / £19

YOUTH PROLONGED: OLD AGE POSTPONED

by **Robert Weale** *(King's College London, UK)*

What exactly is human ageing? Can it be slowed down? These questions have puzzled scientists and laymen alike for generations, and continue to do so today. The author addresses these thought-provoking issues by challenging pre-conceived notions of age-perception, age-acceptance and inter-age relations. Pertinent matters of age-related communication are dealt with, and the reader is treated to a grand tour of the latest theories of ageing, age-related biological changes and age-related diseases, such as Alzheimer's Disease. Here, the author's expertise in age-related eye diseases truly comes into its own.

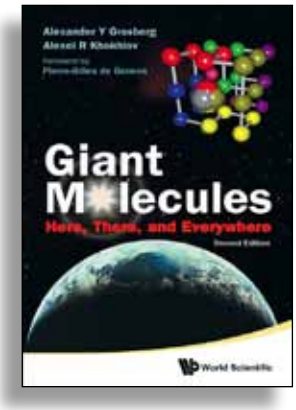
Weale's unique work not only underlines important genetic and avoidable risk factors but gives ample consideration to possible consequences stemming from different early lifestyles. Readers will re-consider their ideas of what it means to age, and gain a better understanding of what can and cannot slow down the process of ageing.

Readership: General public; people interested in the topic of ageing.

GIANT MOLECULES

Here, There, and Everywhere
(2nd Edition)

by **Alexander Y Grosberg** *(New York University, USA)* &
Alexei R Khokhlov *(Moscow State University, Russia)*



This book describes the basic facts, concepts and ideas of polymer physics in simple, yet scientifically accurate, terms. In both scientific and historic contexts, the book shows how the subject of polymers is fascinating, as it is behind most of the wonders of living cell machinery as well as most of the newly developed materials. No mathematics is used in the book beyond modest high school algebra and a bit of freshman calculus, yet very sophisticated concepts are introduced and explained, ranging from scaling and reptations to protein folding and evolution. The new edition includes an extended section on polymer preparation methods, discusses knots formed by molecular filaments, and presents new and updated materials on such contemporary topics as single molecule experiments with DNA or polymer properties of proteins and their roles in biological evolution.

Readership: Undergraduate and graduate students in physics, chemistry and biophysics, chemical and biomedical engineering; advanced high school students; non-experts interested in the physics of polymers and biopolymers.

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

Hardcover: 300pp (approx.)
Pub. date: Aug 2010
978-981-283-922-0
US$60 / £40

CREATIVE MINDS, CHARMED LIVES

Interviews at Institute for Mathematical Sciences,
National University of Singapore

by **Yu Kiang Leong** *(National University of Singapore)*

This book features interviews of 38 eminent mathematicians and mathematical scientists who were invited to participate in the programs of the Institute for Mathematical Sciences, National University of Singapore. Originally published in its newsletter *Imprints* from 2003 to 2009, these interviews give a fascinating and insightful glimpse into the passion driving some of the most creative minds in modern research in pure mathematics, applied mathematics, statistics, economics and engineering.

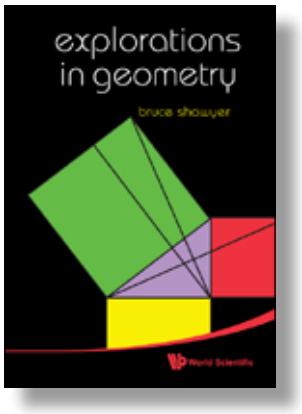
The reader is drawn into a panorama of the past and present developments of some of the ideas that have revolutionized modern science and mathematics. This book should be relevant to those who are interested in the history and psychology of ideas. It should provide motivation, inspiration and guidance to students who aspire to do research and to beginning researchers who are looking for career niches.

For those who wish to be broadly educated, it is informative without delving into excessive technical details and is, at the same time, thought provoking enough to arouse their curiosity to learn more about the world around them.

Readership: Mathematicians, mathematical scientists, historians of mathematics, historians of science, historians of ideas, students and general public.

Rights Information:
Non-English language rights available.

Hardcover: 352pp
Pub. date: Jun 2010
978-981-4317-58-0
US$78 / £48



EXPLORATIONS IN GEOMETRY

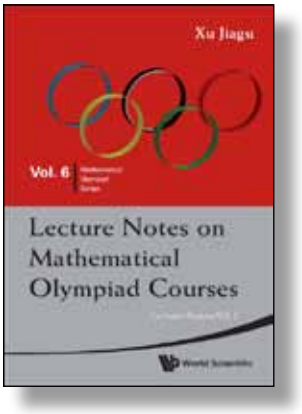
by **Bruce Shawyer** *(Memorial University of Newfoundland, Canada)*

This book covers the basic topics in geometry (including trigonometry) that are accessible and valuable to senior high school and university students. It also includes materials that are very useful for problem solving in mathematical competitions, from relatively easy to advanced levels, including the International Mathematical Olympiad.

Readership: High School and univeristy undergraduate students.

Rights Information:
Non-English language rights available.

Hardcover: 320pp
Pub. date: Mar 2010
978-981-4295-85-7
US$61 / £42
Paperback: 320pp
978-981-4295-86-4(pbk)
US$32 / £22



LECTURE NOTES ON MATHEMATICAL OLYMPIAD COURSES

For Junior Section
(In 2 Volumes)

by **Jiagu Xu** *(Former Professor of Mathematics, Fudan University, China)*

Olympiad mathematics is not a collection of techniques of solving mathematical problems but a system for advancing mathematical education.

This book is based on the lecture notes of the mathematical Olympiad training courses conducted by the author in Singapore. Its scope and depth not only covers and exceeds the usual syllabus, but introduces a variety concepts and methods in modern mathematics.

In each lecture, the concepts, theories and methods are taken as the core. The examples are served to explain and enrich their intension and to indicate their applications. Besides, appropriate number of test questions is available for reader's practice and testing purpose. Their detailed solutions are also conveniently provided.

The examples are not very complicated so that readers can easily understand. There are many real competition questions included which students can use to verify their abilities. These test questions are from many countries, e.g. China, Russia, USA, Singapore, etc. In particular, the reader can find many questions from China, if he is interested in understanding mathematical Olympiad in China.

This book serves as a useful textbook of mathematical Olympiad courses, or as a reference book for related teachers and researchers.

Readership: Mathematics students, school teachers, college lecturers, university professors; mathematics enthusiasts.

Rights Information:
Non-English language rights available.

Paperback
Set: 376pp
Pub. date: Dec 2009
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Vol 1: 376pp
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US$25 / £19
Vol 2: 376pp
Pub. date: Dec 2009
978-981-4293-55-6(pbk)
US$25 / £19

RANDOM FIELDS

Analysis and Synthesis
(Revised and Expanded New Edition)
by **Erik Vanmarcke** *(Princeton University, USA)*

Random variation is a fact of life that provides substance to a wide range of problems in the sciences, engineering, and economics. There is a growing need in diverse disciplines to model complex patterns of variation and interdependence using random fields, as both deterministic treatment and conventional statistics are often insufficient. An ideal random field model will capture key features of complex random phenomena in terms of a minimum number of physically meaningful and experimentally accessible parameters. This volume, a revised and expanded edition of an acclaimed book first published by the M I T Press, offers a synthesis of methods to describe and analyze and, where appropriate, predict and control random fields. There is much new material, covering both theory and applications, notably on a class of probability distributions derived from quantum mechanics, relevant to stochastic modeling in fields such as cosmology, biology and system reliability, and on discrete-unit or agent-based random processes.

Random Fields is self-contained and unified in presentation. The first edition was found, in a review in EOS (American Geophysical Union) to be "both technically interesting and a pleasure to read … the presentation is clear and the book should be useful to almost anyone who uses random processes to solve problems in engineering or science … and (there is) continued emphasis on describing the mathematics in physical terms."

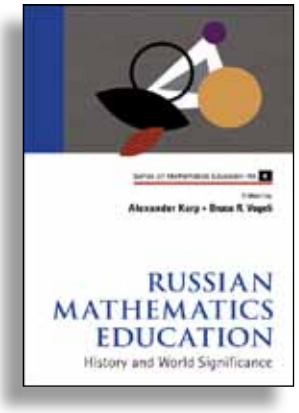
Readership: Advanced undergraduates, graduate students, and professionals in the sciences and engineering, and in economics and finance; anyone interested in using random processes to solve problems involving complex random variation

Rights Information:
Non-English language rights available.

Hardcover: 364pp
Pub. date: Jul 2010
978-981-256-297-5
US$85 / £53

RUSSIAN MATHEMATICS EDUCATION

History and World Significance
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.

Rights Information:
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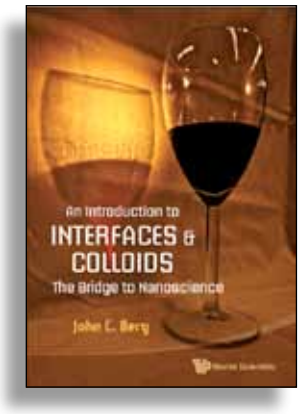
Hardcover: 400pp
Pub. date: Mar 2010
978-981-4277-05-1
US$88 / £61



Rights Information:
Non-English language rights available.

Hardcover: 804pp
Pub. date: Nov 2009
978-981-4293-07-5
US$95 / £71

AN INTRODUCTION TO INTERFACES AND COLLOIDS

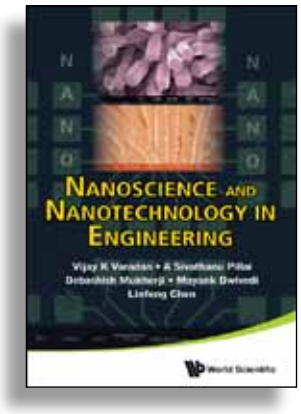
The Bridge to Nanoscience

by **John C Berg** *(University of Washington, USA)*

The textbook seeks to bring readers with no prior knowledge or experience in interfacial phenomena, colloid science or nanoscience to the point where they can comfortably enter the current scientific and technical literature in the area.

Designed as a pedagogical tool, this book recognizes the cross-disciplinary nature of the subject. To facilitate learning, the topics are developed from the beginning with ample cross-referencing. The understanding of concepts is enhanced by clear descriptions of experiments and provisions of figures and illustrations.

Readership: Senior undergraduate and graduate students in chemistry, physics, materials science, chemical engineering, civil engineering, mechanical engineering and related fields.



Rights Information:
Non-English language rights available.

Hardcover: 324pp
Pub. date: Aug 2010
978-981-4277-92-1
US$68 / £45

NANOSCIENCE AND NANOTECHNOLOGY IN ENGINEERING

by **Vijay K Varadan** (University of Arkansas, USA), **A Sivathanu Pillai** *(Defense Research and Development Organization, India)*, **Debashish Mukherji** *(Defense Research and Development Organization, India)*, **Mayank Dwivedi** *(Defense Research and Development Organization, India)* & **Linfeng Chen** *(University of Arkansas, USA)*

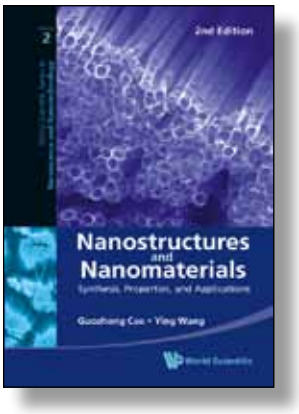
The usage of nanoscience and nanotechnology in engineering directly links academic research in nanoscience and nanotechnology to industries and daily life. As a result, numerous nanomaterials, nanodevices and nanosystems for various engineering purposes have been developed and used for human betterment. This book, which consists of eight self-contained chapters, provides the essential theoretical knowledge and important experimental techniques required for the research and development on nanoscience and nanotechnology in engineering, and deals with the five key topics in this area — Nanoscience and Nanotechnology in Engineering is based on the many lectures and courses presented around the world by its authors.

Readership: Undergraduates, graduates and researchers in nanoscience and nanotechnology in engineering.

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.

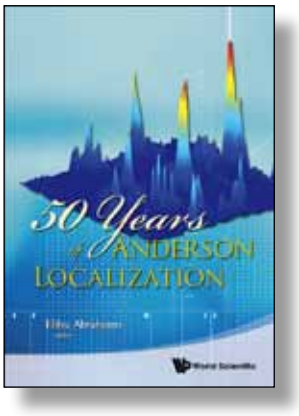
Readership: Senior undergraduates, graduate students, academics and researchers in nanomaterials and nanostructures.

Rights Information:
Non-English language rights available.

Hardcover: 600pp (approx.)
Pub. date: Aug 2010
978-981-4322-50-8
US$130 / £81

50 YEARS OF ANDERSON LOCALIZATION

edited by **Elihu Abrahams** *(University of California, Los Angeles, USA)*



In his groundbreaking paper "Absence of diffusion in certain random lattices (1958)", Philip W Anderson originated, described and developed the physical principles underlying the phenomenon of the localization of quantum objects due to disorder. Anderson's 1977 Nobel Prize citation featured that paper, which was fundamental for many subsequent developments in condensed matter physics and technical applications. After more than a half century, the subject continues to be of fundamental importance. In particular, in the last 25 years, the phenomenon of localization has proved to be crucial for the understanding of the quantum Hall effect, mesoscopic fluctuations in small conductors, some aspects of quantum chaotic behavior, and the localization and collective modes of electromagnetic and matter waves.

This unique and invaluable volume celebrates the five decades of the impact of Anderson localization on modern physics. In addition to the historical perspective on its origin, the volume provides a comprehensive description of the experimental and theoretical aspects of Anderson localization, together with its application in various areas, which include disordered metals and the metal–insulator transition, mesoscopic physics, classical systems and light, strongly-correlated systems, and mathematical models.

Readership: Graduate students and professionals in condensed matter physics.

Rights Information:
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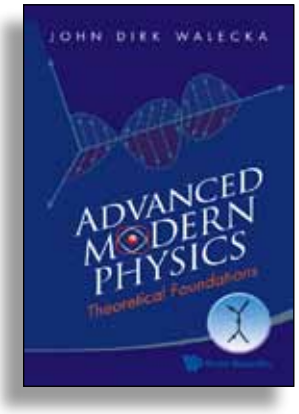
Hardcover: 612pp
Pub. date: Jun 2010
978-981-4299-06-0
US$128 / £84



Rights Information:
Non-English language rights available.

Hardcover: 500pp
Pub. date: Mar 2010
978-981-4291-51-4
US$88 / £58

ADVANCED MODERN PHYSICS

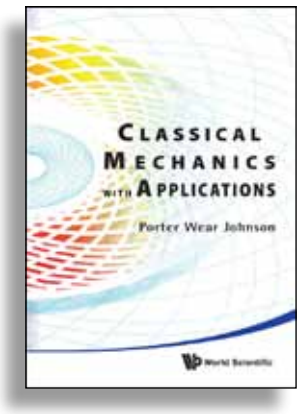
Theoretical Foundations

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

Our understanding of the physical world was revolutionized in the twentieth century — the era of "modern physics". This book, aimed at the very best students, extends the coverage of the theoretical groundwork of today's physics presented in the previous volume: *Introduction to Modern Physics: Theoretical Foundations* (Vol. I). Typically, students have to wade through several courses to see many of these topics. The goal is to give them some idea of where they are going, and how things fit together, as they go along.

The present book focuses on the following topics: reformulation of quantum mechanics, angular momentum, scattering theory, lagrangian field theory, symmetries, Feynman rules, quantum electrodynamics, including higher-order contributions, path integrals, and canonical transformations for quantum systems. Many problems are included that enhance and extend the coverage. The book assumes a mastery of the material in Vol. I, and the continued development of mathematical skills, including multivariable calculus and linear algebra. Several appendices provide important details, and any additional required mathematics. The reader should then find the text, together with the appendices and problems, to be self-contained. The aim is to cover the framework of modern theoretical physics in sufficient depth that things "make sense" to students, and, when finished, the reader should have an elementary working knowledge in the principal areas of theoretical physics of the twentieth century.

Readership: Upper level undergraduate and graduate students, researchers in physics.



Rights Information:
Non-English language rights available.

Hardcover: 296pp
Pub. date: Jan 2010
978-981-4304-15-3
US$56 / £37

CLASSICAL MECHANICS WITH APPLICATIONS

by **Porter Wear Johnson** *(Illinois Institute of Technology, USA)*

This textbook — appropriate for a one-semester course in classical mechanics at the late undergraduate or early graduate level — presents a fresh, modern approach to mechanics. About 150 exercises, covering a wide variety of topics and applications, have solutions roughly outlined for enhanced understanding. Unique to this text is the versatile application of programming language Mathematica™ throughout to analyze systems and generate results. Coverage is also devoted to the topic on one dimensional continuum systems. The extensive discussions on inverse problems of mechanical systems and the detailed analysis of stability of classical systems certainly make this an outstanding textbook.

Readership: Undergraduate, graduate students and professionals in classical mechanics and mathematical physics.

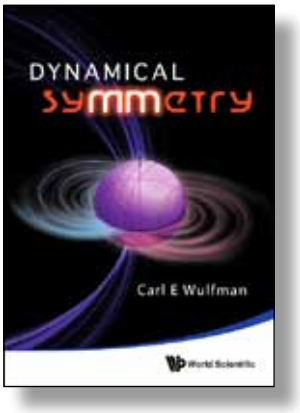
DYNAMICAL SYMMETRY

by **Carl E Wulfman** *(University of the Pacific, USA)*

Whenever systems are governed by continuous chains of causes and effects, their behavior exhibits the consequences of dynamical symmetries, many of them far from obvious. *Dynamical Symmetry* introduces the reader to Sophus Lie's discoveries of the connections between differential equations and continuous groups that underlie this observation. It develops and applies the mathematical relations between dynamics and geometry that result. Systematic methods for uncovering dynamical symmetries are described, and put to use. Much material in the book is new and some has only recently appeared in research journals.

Though Lie groups play a key role in elementary particle physics, their connection with differential equations is more often exploited in applied mathematics and engineering. *Dynamical Symmetry* bridges this gap in a novel manner designed to help readers establish new connections in their own areas of interest. Emphasis is placed on applications to physics and chemistry. Applications to many of the other sciences illustrate both general principles and the ubiquitousness of dynamical symmetries.

Readership: Established physicists, atomic physicists, molecular physicists, theoretical chemists, biophysicists, applied mathematicians; junior and senior undergraduate majors in physics, mathematics, physical chemistry; graduate students in these areas, and in chemical physics, quantum chemistry, biophysics.



Rights Information:
Non-English language rights available.

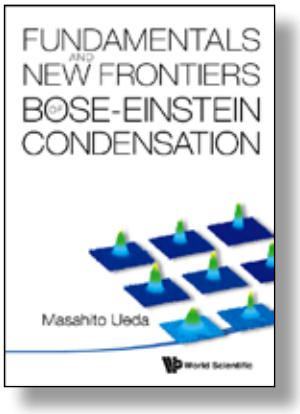
Hardcover: 450pp (approx.)
Pub. date: Sep 2010
978-981-4291-36-1
US$109 / £75

FUNDAMENTALS AND NEW FRONTIERS OF BOSE-EINSTEIN CONDENSATION

by **Masahito Ueda** *(University of Tokyo, Japan)*

This book covers the fundamentals of and new developments in gaseous Bose–Einstein condensation. It begins with a review of fundamental concepts and theorems, and introduces basic theories describing Bose-Einstein condensation (BEC). It then discusses some recent topics such as fast-rotating BEC, spinor and dipolar BEC, low-dimensional BEC, balanced and imbalanced fermionic superfluidity including BCS-BEC crossover and unitary gas, and p-wave superfluidity.

Readership: Researchers, scientists, graduate students, and advanced undergraduate students in quantum physics.



Rights Information:
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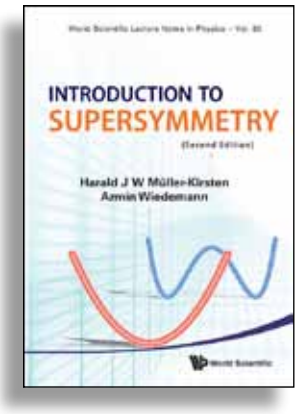
978-981-283-959-6
US$85 / £58



INTRODUCTION TO SUPERSYMMETRY

(Second Edition)

by **Harald J W Müller-Kirsten** *(University of Kaiserslautern, Germany)* & **Armin Wiedemann** *(Baden-Wüerttemberg Cooperative State University Mannheim, Germany)*

Supersymmetry is a symmetry which combines bosons and fermions in the same multiplet of a larger group which unites the transformations of this symmetry with that of spacetime. Thus every bosonic particle must have a fermionic partner and vice versa. Since this is not what is observed, this symmetry with inherent theoretical advantages must be badly broken. It is hoped that the envisaged collider experiments at CERN will permit a first experimental test, which is expected to revive the interest in supersymmetry considerably.

This revised edition of the highly successful text of 20 years ago provides an introduction to supersymmetry, and thus begins with a substantial chapter on spacetime symmetries and spinors. Following this, graded algebras are introduced, and thereafter the supersymmetric extension of the spacetime Poincaré algebra and its representations. The Wess Zumino model, superfields, supersymmetric Lagrangians, and supersymmetric gauge theories are treated in detail in subsequent chapters. Finally the breaking of supersymmetry is addressed meticulously. All calculations are presented in detail so that the reader can follow every step.

Readership: Advanced undergraduate, graduate students, and professionals in theoretical and high-energy physics

Rights Information:
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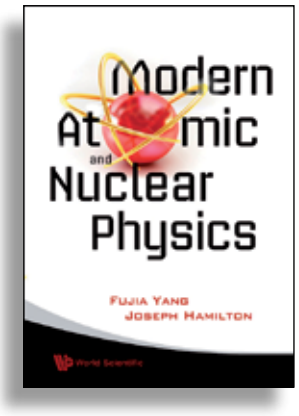
Hardcover: 452pp
Pub. date: Jan 2010
978-981-4293-41-9
US$90 / £59

Paperback: 452pp
978-981-4293-42-6(pbk)
US$58 / £38



MODERN ATOMIC AND NUCLEAR PHYSICS

(Revised Edition)

by **Fujia Yang** *(Fudan University, China & Nottingham University, UK)* & **Joseph H Hamilton** *(Vanderbilt University, USA)*

The book is the culmination of the authors' many years of teaching and research in atomic physics, nuclear and particle physics, and modern physics. It is also a crystallization of their intense passion and strong interest in the history of physics and the philosophy of science.

The book gives students a broad perspective of the current understandings of the basic structures of matter from atoms, nucleus to leptons, quarks, and gluons along with the essential introductory quantum mechanics and special relativity. Fundamentals aside, the book retrospects the historical development and examines the challenging future directions of nuclear and particle physics. Interwoven within the content are up-to-date examples of very recent developments and future plans that show in detail how the techniques and ideas of atomic, nuclear, and particle physics have been used and are being used to solve important problems in basic and applied areas of physics, chemistry, and biology that are closely linked to the prevailing major societal problems in medicine, energy resources, new custom-made materials and environmental pollution, as well as areas that encroach the broad cultural and historical interest. The uncertain path of success and failure, opportunities seized and missed, and the axiom of probability and scientists' intuition in the unfolding human drama of scientific discovery are vividly presented. Throughout the highly perceptive book, readers, especially the students are encouraged to reflect on problems and ask questions.

Readership: Undergraduate and graduate students who are interested in modern atomic and nuclear physics.

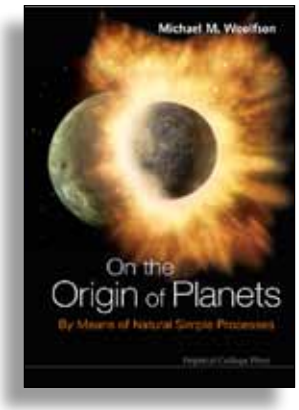
Rights Information:
Non-English language rights available.

Hardcover: 812pp
Pub. date: Jan 2010
978-981-283-678-6
US$128 / £84

ON THE ORIGIN OF PLANETS

By Means of Natural Simple Processes

by **Michael Mark Woolfson** *(University of York, UK)*



The book begins with a historical review of four major theories for the origin of the Solar System in particular, or of planets in general, which highlight the major problems that need to be solved by any plausible theory. In many theories, including that which form the major theme of this book, the formation of planets and stars is intimately linked, so four chapters are devoted to the processes that can be described as the birth, life and death of stars.

Recent observations that have revealed the existence of planets around many Sun-like stars are described in detail, followed by a clear exposition of the Capture Theory for the origin of planets. Many aspects of this theory are illustrated with sophisticated computer modelling that convincingly demonstrates the plausibility of the theory. The Capture Theory is in complete accord with all observations, including the estimate it gives for the proportion of Sun-like stars with planets. It is the only theory that sits comfortably with all present observational and theoretical constraints.

The general theory of planet formation does not explain the detailed structure of the Solar System. An early postulated collision of two major planets is shown to explain many disparate features of the Solar System — the nature of the terrestrial planets, surface features of the Moon and its relationship with Earth, asteroids, comets and dwarf planets, the relationship between Neptune, Triton and Pluto and the characteristics of meteorites, including the isotopic anomalies found in them. The postulate of a planetary collision is given support by a 2009 NASA observation of the residue of such an event around a distant young star.

Readership: Undergraduates to researchers and also of general interest.

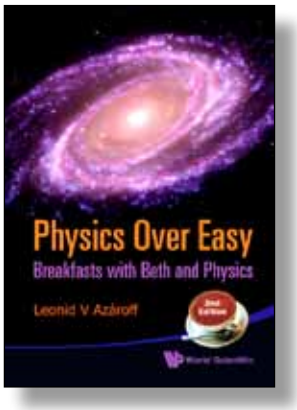
Rights Information:
Non-English language rights available.

Hardcover: 400pp (approx.)
Pub. date: Oct 2010
978-1-84816-598-4
US$79 / £52

PHYSICS OVER EASY

Breakfasts with Beth and Physics
(2nd Edition)

by **Leonid V Azároff** *(University of Connecticut, USA)*



During a sequence of meals, the author relates the principal features of physics in easy-to-understand conversations with his wife Beth. Beginning with the studies of motion by Galileo and Newton through to the revolutionary theories of relativity and quantum mechanics in the 20th century, all important aspects of electricity, energy, magnetism, gravity and the structure of matter and atoms are explained and illustrated.

The second edition similarly recounts the more recent application of these theories to nanoparticles, Bose–Einstein condensates, quantum entanglement and quantum computers. By including accurate measurements of the Cosmic Microwave Background and supernovae in near and distant galaxies, an understanding of how the universe was formed in an Inflationary Big Bang is now possible. We've also gained a much better picture of the life of stars and how they may turn into red giants, white dwarfs, black holes, neutron stars or pulsars.

Readership: General readers curious about science.

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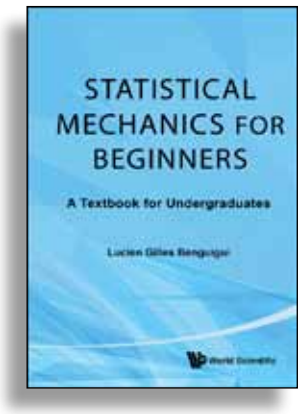

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STATISTICAL MECHANICS FOR BEGINNERS

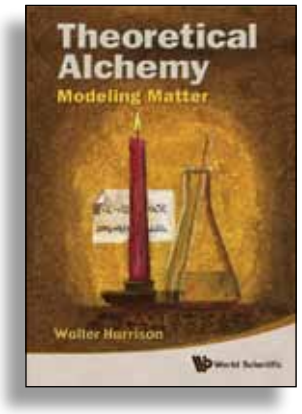
A Textbook for Undergraduates

by **Lucien Gilles Benguigui** *(Israel Institute of Technology, Israel)*

This textbook is for undergraduate students on a basic course in Statistical Mechanics. The prerequisite is thermodynamics. It begins with a study of three situations — the closed system and the systems in thermal contact with a reservoir — in order to formulate the important fundamentals: entropy from Boltzmann formula, partition function and grand partition function. Through the presentation of quantum statistics, Bose statistics and Fermi–Dirac statistics are established, including as a special case the classical situation of Maxell–Boltzmann statistics. A series of examples ensue it: the harmonic oscillator, the polymer chain, the two level system, bosons (photons, phonons, and the Bose–Einstein condensation) and fermions (electrons in metals and in semiconductors). A compact historical note on influential scientists forms the concluding chapter.

The unique presentation starts off with the principles, elucidating the well-developed theory, and only thereafter the application of theory. Calculations on the main steps are detailed, leaving behind minimal gap. The author emphasizes with theory the link between the macroscopic world (thermodynamics) and the microscopic world.

Readership: Undergraduate students in physics, chemistry, material engineering and electrical engineering.



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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.

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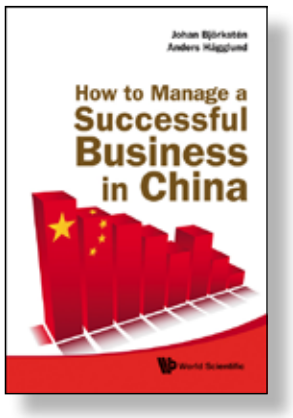

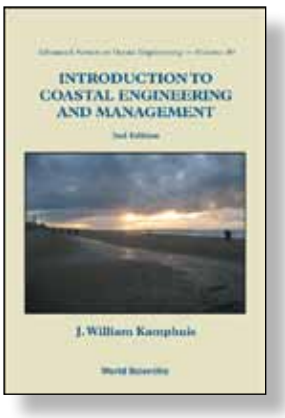

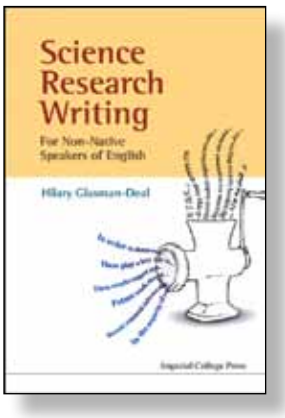

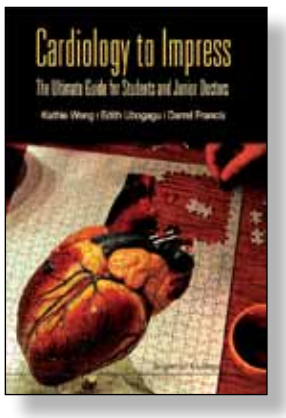

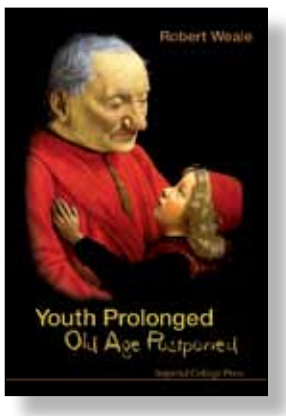

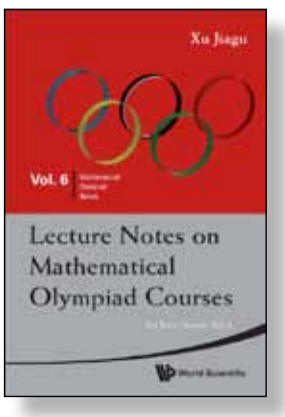

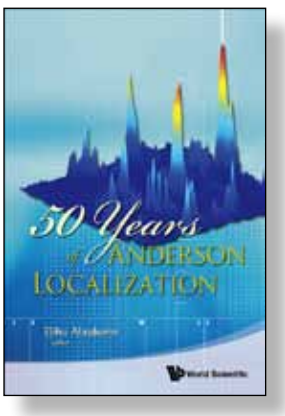

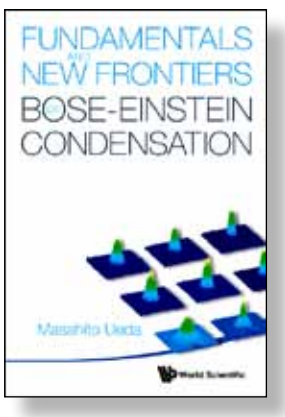

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