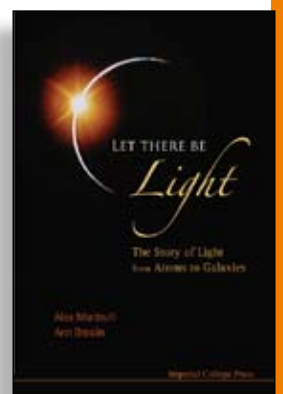
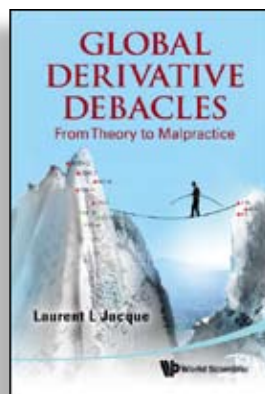
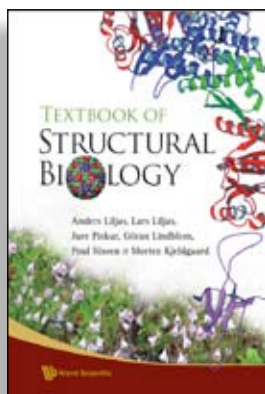
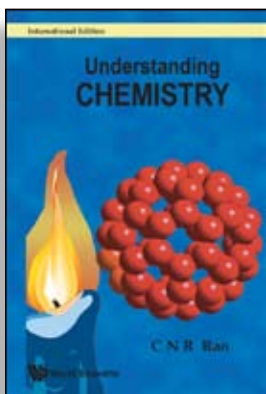
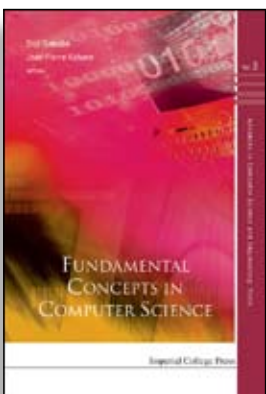
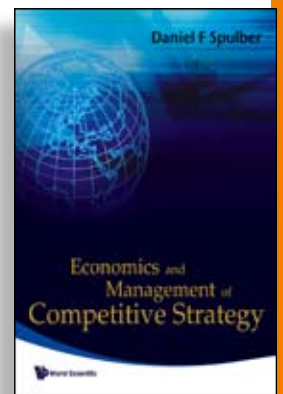
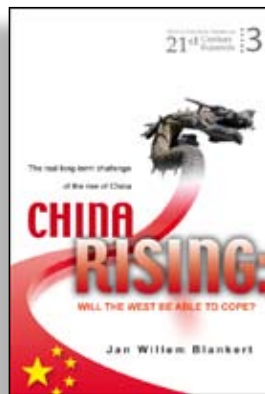
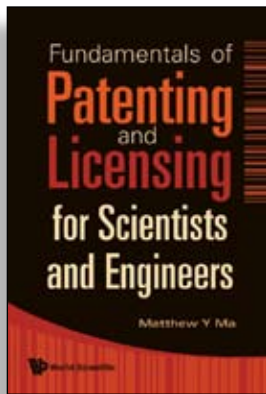
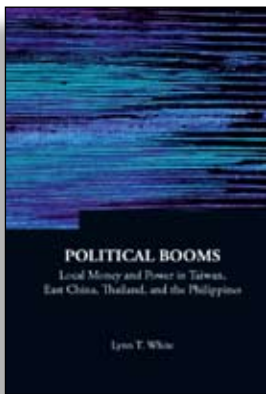


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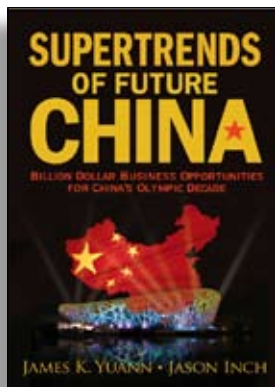
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SUPERTRENDS OF FUTURE CHINA

Billion Dollar Business Opportunities for China's Olympic Decade
by **James K Yuann & Jason Inch**

BLOG: China Supertrends @ <http://www.chinasupertrends.com>

The Beijing Olympics in 2008 marks the beginning of an era of new business opportunities in China for 1.3 billion Chinese and the rest of the world. For investors, marketers, and businesspeople who want to understand the new drivers and business chances of the Chinese economy, *Supertrends of Future China* is the definitive guidebook. The authors — two experts with decades of experience in Asia and both corporate and entrepreneurial track records — introduce readers to China's ten supertrends: Value-adding and Innovating, Urbanizing and Servicing, Consuming and Aspiring, Inter-networking and e-Commercializing, Affluencing and Greening. These supertrends form the foundations of the best opportunities in the manufacturing, service, lifestyle, e-Commerce, telecommunications, finance, and environment industries during China's Olympic Decade.

This complete book of new China opportunities presents the latest information and analysis from a positive and objective angle, focusing on the potential for business success rather than finger-pointing and fear-mongering. Written by businesspeople for businesspeople, it is an essential book for anybody doing business, investing, or working in China. It will also appeal to general readers interested in China's social, economic, and environmental development.

Readership: Investors, marketers, businesspeople and general readers with an interest in China, its economy, environment and people.

About the Authors

James K Yuann (Jim) is an Asian Advisory Council member of the AMA (American Management Association) and an International Advisory Council for Asia member of Washington University in St. Louis, Missouri and is currently Managing Director of Boyden China, a subsidiary of the international human resources firm Boyden. Jim was also recently made an Adjunct Professor at Fudan University, where he teaches the 'Leadership Development' course in the IMBA program collaborated by MIT (Sloan) and Fudan University. Jim was the President, Asia, for Honeywell's Specialty Materials (SM) business until mid-2006.

Jason Inch holds an MBA from Canada's Richard Ivey School of Business and also attended one of China's top business schools, China-Europe International Business School (CEIBS). Jason has worked as a strategy consultant for several multinational companies' China offices, and has been involved as a marketing consultant for Chinese companies in the media and property sectors, working on marketing strategy and business development. He also teaches part-time in Shanghai in both educational institutions and for corporate clients in business topics such as International Business and Intercultural Communications.

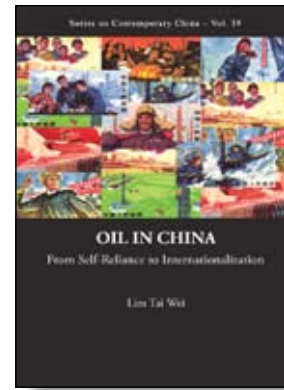
OIL IN CHINA

From Self-Reliance to Internationalization

by **Lim Tai Wei** (*East Asian Institute, National University of Singapore, Singapore*)

This book examines the political and conceptual metamorphosis of China's oil industry from self-reliance to internationalization. Through the empirical case study of Daqing, the premiere oilfield of the People's Republic of China (PRC) for most of the postwar period and a symbol of industrialization as well as self-reliance, key historical developmental concepts and events are analyzed. Japan's role in stimulating the development of the China's oil industry will also be highlighted as the Japanese government and its business sectors emerged as a supplier of technology and equipment to the Chinese oil industry as well as China's first major oil customer in the early internationalization phase of the PRC's oil industry.

Readership: Scholars who are interested to learn about the Chinese industrial history in the transitional period between Republican China and People's Republic of China; Sinologists, researchers in East Asian Studies, professors as well as those interested in Chinese political economy.



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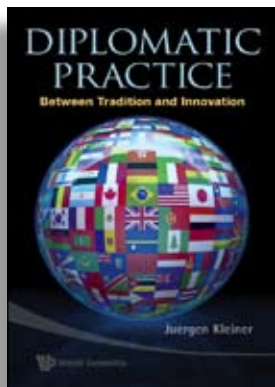
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Other Titles by the Author:

Destructive Creativity of Wall Street and the East Asian Response, 2009

Rise of China and India: A New Asian Drama, 2009

Oil and Gas in China: The New Energy Superpower's Relations with its Region, 2009

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US\$58 £44

DIPLOMATIC PRACTICE

Between Tradition and Innovation

by **Juergen Kleiner** (Boston University, USA)

This book presents a comprehensive overview of the current international practice of diplomacy. Armed with over 30 years of experience in the German Foreign Service, the author explains the workings of the different actors on the diplomatic stage. The book provides a detailed coverage of various diplomatic agencies as well as the functions of diplomats and consuls, explaining the methods and protocols of the art of diplomacy. It will serve as a good reference source for students and scholars of diplomacy, diplomats in foreign ministries and diplomatic and consular missions.

Readership: Undergraduate and graduate students of international relations; members of diplomatic missions, consulates and foreign ministries; general readers interested in how diplomacy works.

“Juergen Kleiner’s ‘Diplomatic Practice’ has all the ingredients to become the reference book for a generation. Only a lifelong practitioner of diplomacy turned university professor could produce such a vivid, authoritative and well articulated portrait of his profession ... Kleiner’s definitions are crystal clear, his judgement is always balanced, his language is that of a trained lawyer. The book thereby also covers a large segment of current international law ... In fact, it is three things in one: It is at the same time a tool-box for practitioners, a handbook for scholars and a textbook for students and applicants. A tremendous amount of work has gone into it.”

Dr Ernst-Ulrich Junker, Minister (ret.)

Previous Head of the Economic and Scientific Section of the German Embassy in Tokyo

About the Author

Juergen Kleiner was a career diplomat in the German Foreign Service. He served as ambassador to South Korea, Nigeria and Pakistan. He is the author of *Korea: A Century of Change* (World Scientific) and of many articles. After retiring from the foreign service, he became Professor of International Relations at Boston University and is now a Professor Emeritus.

POLITICAL BOOMS

Local Money and Power in Taiwan, East China, Thailand, and the Philippines
by **Lynn T White** (Princeton University, USA)

Why have Taiwan, rich parts of China, and Thailand boomed famously, while the Philippines has long remained stagnant both economically and politically? Do booms abet democracy? Does the rise of middle “classes” promise future liberalization? Why has Philippine democracy brought no boom and barely served the Filipino people?

This book, unlike most previous studies, shows that both the roots and results of growth are largely political rather than economic. Specifically, it pays attention to local, not just national, power networks that caused or prevented growth in the four places under consideration. Violence has been common in these polities, along with money. Elections have contributed to socio-political problems that are also obvious in Leninist or junta regimes, because elections are surprisingly easy to buy with corrupt money from government contracts. Liberals should pay more serious theoretical attention to the effects of money on justice, and Western political science should focus more clearly on the ways non-state local power affects elections. By considering the effects on fair justice of local money and power (largely from small- and medium-sized firms that emerge after agrarian reforms), this book asks democrats to face squarely the extent to which electoral procedures fail to help ordinary citizens. Students and scholars of Asia will all need this book — as will students of the West whose methods have become parochial.

Readership: Academics, researchers and graduate and advanced undergraduate students in Asian politics, sociology and political economy; informed readers interested in the causes of growth or stagnancy in Asian political economies.

“Professor White is one of the leading scholars on China and the rest of Asia. Here, his interests in China are on the local, particularly in southern Jiangsu and Zhejiang, and he gives special emphasis to the role of political networks at the local level. Importantly, however, he brings his thesis to bear on Taiwan, Thailand and the Philippines. I cannot think of any existing work with a similar range and analytical perspective.”

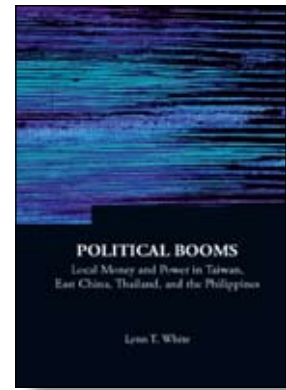
Dali Yang
University of Chicago, US

About the Author

Lynn White teaches in the Woodrow Wilson School, Politics Department, and East Asian Studies Program at Princeton. His previous books include *Careers in Shanghai*, about urban citizens during socialist consolidation in the 1950s. *Policies of Chaos* explores the causes of violence in Shanghai’s Cultural Revolution during the 1960s. *Unstately Power* follows these into China’s reform era, which he dates from the early 1970s, and further into the Yangzi Delta; the first volume of this book won the Association for Asian Studies Joseph Levenson Award. For each period, as for the comparative China-Southeast Asia book in your hands, White explains political patterns by looking locally at both intended norms and unintended contexts, both for individuals and for larger groups. Lynn has also published articles about cross-Strait relations, Chinese leadership, and identity politics. He hopes to contribute toward the development of liberal study that is less implicitly American than is most recent political science.

Other Title by the Author:

Legitimacy: Ambiguities of Political Success or Failure in East and Southeast Asia, 2005



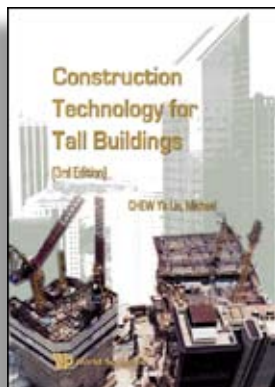
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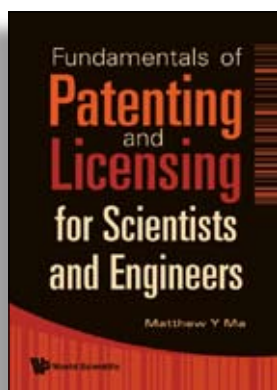


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CONSTRUCTION TECHNOLOGY FOR TALL BUILDINGS

(3rd Edition)

by **Chew Yit Lin, Michael** (*National University of Singapore, Singapore*)

This book introduces the latest construction practices and processes for tall buildings from foundation to roof. It attempts to acquaint readers with the methods, materials, equipment and systems used for the construction of tall buildings.

The target readers are practitioners and students in the related professions including architecture, engineering, building, real estate, construction, project and facilities management, and quantity and land surveying.

FUNDAMENTALS OF PATENTING AND LICENSING FOR SCIENTISTS AND ENGINEERS

by **Matthew Y Ma** (*Scientific Works, USA*)

This book is the first of its kind to teach scientists and engineers how to go beyond simply getting a patent granted. It covers various aspects, from basic concepts of patent laws, patent preparation to patent post granting, in an easy-to-understand language for inventors. It also introduces the basis of patent licensing and related business aspects, helping inventors create patents that can be better capitalized. Through the author's extensive scientific background and experience, it provides common pitfalls and tips on how an inventor should assist in all phases of patent filing, prosecution and licensing.

"Matthew Ma has a deep understanding of the world of patents from the legal, technology, and business perspective. However, the brilliance of his book is the reduction of these complex concepts into easy to understand language. As the title would indicate, it is great for Scientists and Engineers, but also a must read for technology business leaders."

James Billmaier
Founder, Patent Navigation Inc.

"This is an excellent and useful book meant to help both the beginners and experts, written in an easy-to-read style starting from the basics and going into technical depths. The author gives many practical tips based on his extensive experience in patenting and in working in R&D."

Prabir Bhattacharya, PhD
IEEE Fellow; Professor and Canada Research Chair
Concordia University, Montreal, Canada

Other Title by the Author:

Personalization Techniques and Recommender Systems, 2008

CHINA RISING: WILL THE WEST BE ABLE TO COPE?

The Real Long-Term Challenge of the Rise of China — and Asia in General
by **Jan Willem Blankert**

Why do some countries get rich and other countries don't? Does one country's gain mean another country's loss? How do we address the biggest challenge of all: the fact that our environment suffers when we all want to have our share of the cake? These key questions in international economics and business are addressed in this timely book. Covering issues such as economic growth, the drivers of economic growth and international competition, pollution and the division of labor, the book focuses on China's emergence, but examples of other countries provide context and perspective. Written in a jargon-free style yet extremely well-researched, it is suitable for economists and non-economists alike.

Readership: Academics in economics and business, business practitioners and general readers interested in the rise of China.

"The production of this book 'China Rising: Will the West be Able to Cope?' while Jan Willem Blankert was a fellow at Lee Kuan Yew School of Public Policy, shows the cross-fertilization of ideas in an increasingly globalized world. Thoughtful analyses like this are essential for promoting better East-West understanding in this new era. Jan Willem Blankert has done the world a great service by producing this volume."

Kishore Mahbubani

**Dean of the Lee Kuan Yew School of Public Policy (NUS),
author of The New Asian Hemisphere: The Irresistible Shift of Global Power to the East**

"Once viewed with fear in the West, rising China is now seen as essential for the survival of the global economy. But does the West really have a coherent strategy towards China? And as China continues to post impressive growth rates despite the crisis, will Europe or America be able to cope? Jan Willem Blankert's book throws some much-needed light on these and other key challenges that the West faces as it strives to adapt to China's growing clout."

Shada Islam

**Leads the Asia programme at the European Policy Centre in Brussels,
and former EU correspondent of the Far Eastern Economic Review**

"This book of Jan Willem Blankert offers timely information and in-depth analysis on the consequences and potential impact of China's rise on the global economic order and, above all, the environment. For anyone interested in China and its relations with the world, this book is highly recommended, if not a must-read."

Jing Men

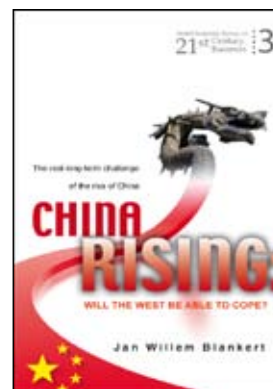
**InBev-Baillet Latour Chair of European Union-China Relations
College of Europe, Bruges (Belgium)**

"Since China will continue to grow — albeit at a slower pace — the answer depends not only on Beijing's conduct, but on whether the US and Europe can adapt to a new world order, argues Jan Willem Blankert in a refreshingly counter-intuitive book China Rising: Will the West be Able to Cope?"

The Business Times, Singapore

About the Author

Jan Willem Blankert works as a diplomat for the European Commission (EC) in Jakarta as Special Advisor for the relationship of the EU with the Association of South East Asian Nations (ASEAN). He joined the EC in 1985. He is an economist and a veteran of economic and political reform and integration. He wrote this book while on a fellowship at the Lee Kuan Yew School of Public Policy of the National University of Singapore during the academic year 2007/2008. The opinions (sometimes very personal) expressed in this book are strictly his own.



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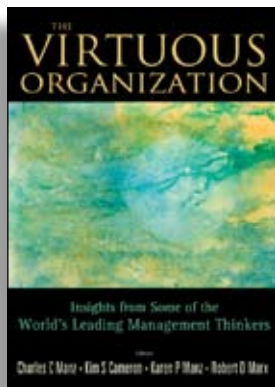
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THE VIRTUOUS ORGANIZATION

Insights from Some of the World's Leading Management Thinkers
edited by **Charles C Manz** (*University of Massachusetts, USA*), **Kim S Cameron** (*University of Michigan, USA*), **Karen P Manz** (*Hartford Seminary, USA*) & **Robert D Marx** (*University of Massachusetts, USA*)

Until recently, scholarly research paid scant attention to virtue, especially in organizations. The pursuit of virtue, as opposed to the bottom line, remained outside the acceptable domain of practising managers faced with economic pressures and stakeholder demands. Concepts such as efficiency, return on investment (ROI), and competitive advantage were emphasized over more virtuous concerns such as caring, compassion, integrity and wisdom. *The Virtuous Organization* fills this void by presenting paradigm-shifting insights of leading scholars that have the potential to change the face of management thinking and practice for both this and future generations.

Readership: Professors, graduate students, academics, multidisciplinary scholars, professional managers (especially in specialized positions such as industrial psychologists and human resource managers), corporate trainers, consultants, academic administrators, non-profit administrators, clergy or theologians.

CREATING ENTREPRENEURS

Making Miracles Happen
edited by **Fred Kiesner** (*Loyola Marymount University, USA*)

This book gives short, action-oriented snippets of thoughts and ideas from some of the finest thinkers of entrepreneurship. It provides insights into educational activities, entrepreneurial thinking and on-the-streets operational methodologies of entrepreneurship. The thoughts, experiences, ideas and "doable" actions presented in the book will help budding entrepreneurs pave the way for future entrepreneurial success. The contributors range from world-class educators and successful entrepreneurs, to creative social entrepreneurs.

Written in a simple and accessible manner, this book will be of interest to educators, mentors, advisors, policy makers, students, future entrepreneurs and the general public.

Readership: Graduates, researchers and general public interested in entrepreneurship.

INDIAN ECONOMIC SUPERPOWER

Fiction or Future?

edited by **Jayashankar M Swaminathan** (University of North Carolina at Chapel Hill, USA)

In this volume, leading experts and scholars present an in-depth analysis of the rise of the Indian economy across various sectors over the last 15 years. The book explores potential opportunities and pitfalls in business sectors such as software, business process outsourcing, manufacturing, logistics, aviation, marketing and sales and telemedicine. It also provides an overview of potential challenges related to infrastructure, lopsided growth and education in India and pitfalls to avoid while entering India. The book concludes by identifying sectors of outstanding potential for growth in the upcoming decade. This book is geared towards managers and executives of multinational firms, business students, potential investors or anyone interested in obtaining a deeper understanding about the Indian business economy and its growth story.

"India is an emerging economy that intersects the supply chain of many companies and industries. This is the first book that allows you to learn about the state of the art of supply chain practices, innovative approaches, and the future outlook for India and its neighbors. The content is exceedingly rich and interesting, and will be highly valuable to academics and practitioners."

Hau Lee

**Thoma Professor of Operations Information and Technology
Graduate School of Business, Stanford University**

"This book provides interesting insights into the everyday challenges faced in doing business in India and the associated rewards. The detailed analysis of different sectors with specific examples is extremely useful. This book will be very valuable to any multinational connected with doing business in India."

Raman Krishnan Nurani

Founder and First Managing Director of KLA-Tencor, India

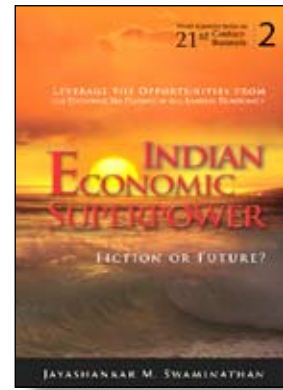
"This book comes at a very good time and provides a much needed perspective. It differs from many academic books by being concrete and focusing on key verticals, like medicine and logistics, rather than being abstract and horizontal. It separates itself from consultant articles by being deep and not suffering from the latest twist or buzz, and by avoiding unsubstantiated long-term forecasts. Thankfully, it also keeps away from the journalistic hyperboles of India's medieval past as well as the infinitely unconstrained possibilities of an apparently flat world. A good first read for any person with serious interest in India."

Sridhar Tayur

**Founder and CEO SmartOps Corporation and
Ford Distinguished Research Professor of Manufacturing and Operations
Management, Tepper School of Business, Carnegie Mellon University**

About the Editor

Jayashankar M Swaminathan is Kay and Van Weatherspoon Distinguished Professor of the Operations, Technology and Innovation Management area at the Kenan-Flagler Business School, University of North Carolina at Chapel Hill. Professor Swaminathan is an internationally recognized researcher, teacher and thought leader in global operations, innovation and supply chain strategy. He has published over 50 academic articles on these topics and has been recognized with several awards including the CAREER Award given by the National Science Foundation (NSF). His thoughts have appeared in various media outlets including *Business Week*, *Financial Times*, *Chief Executive* and *CIO Magazine*. Over the last 15 years, Professor Swaminathan has consulted with a number of US and international firms and has given presentations at conferences worldwide. Professor Swaminathan obtained his doctoral and master's degrees in Industrial Administration at Carnegie Mellon University and his bachelor's degree in Computer Science and Engineering from the Indian Institute of Technology, Delhi. Prior to joining Kenan-Flagler Business School, he was part of the faculty at Walter A Haas School of Business, University of California, Berkeley.



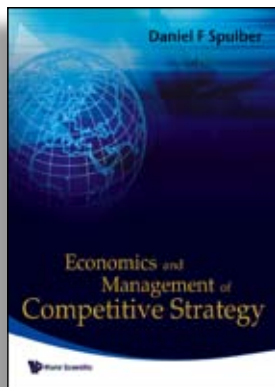
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Pub. date: Fall 2009

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US\$75 £56

ECONOMICS AND MANAGEMENT OF COMPETITIVE STRATEGY

by **Daniel F Spulber** (*Northwestern University, USA*)

This book provides a comprehensive and integrated approach to management strategy that is based on economics. A basic introductory strategy text that integrates economic analysis with management strategy, it takes into account global competition and high-tech (Internet) developments, and recognizes that companies today can no longer expect to sustain competitive advantage but must rely on innovation (of products, processes, and transactions). Although many of the principles are illustrated with numerical examples, the text does not require a background course in economics or mathematics, and does not contain technical graphs or equations. Thus, the book is suitable for undergraduate managerial economics and strategy courses, as well as for introductory MBA courses in business strategy and as a companion to case studies.

Readership: Undergraduate students in managerial economics and business strategy courses; graduate MBA students.

THE VALUE SPHERE

The Corporate Executives' Handbook for Creating and Retaining Shareholder Wealth
(4th Edition)

by **John Boquist** (*Indiana University of Bloomington, USA*), **Todd Milbourn & Anjan Thakor** (*Washington University in St Louis, USA*)

This book, written in story narrative form, traces the development of a company from a start-up to a global enterprise. It develops the key concepts related to this evolution — corporate strategy, raising external finance, capital budgeting, dividend policy, mergers and acquisition, globalization, marketing and human resource management. The focus is on topics in corporate strategy and corporate finance, and each topic is developed in depth with problem sets and reflection questions within the context of the organization's evolution.

Readership: Academics teaching and studying organizational behavior, corporate governance, managers, CEOs and CFOs.

CHEMISTRY — THE IMPURE SCIENCE

by **Bernadette Bensaude-Vincent** (*Université Paris X, France*) &
Jonathan Simon (*Université Lyon 1, France*)

This book uses history to introduce central issues in the philosophy of chemistry. Mobilizing the theme of impurity, it explores the tradition of chemistry's negative image. It then argues for the positive philosophical value of chemistry, reflecting its characteristic practical engagement with the material world. The book concludes with some ethical reflections concerning chemistry's orientations in the twenty-first century.

The authors have previously both offered significant contributions to the history and philosophy of chemistry.

Readership: Undergraduate, graduate of chemistry and philosophy.

Other Title by the Author(s):

Public Image of Chemistry, 2007

CHEMISTRY VERSUS PHYSICS

Chemical Reactions near Critical Points

by **Moshe Gitterman** (*Bar-Ilan University, Israel*)

Chemical reactions at high pressures are widely used in modern technology (supercritical extraction is an example). On the other hand, critical phenomena is the more advanced field in statistical mechanics. There are thousands of theoretical and experimental articles published by physicists, chemists, biologists, chemical engineers and material scientists, but, to our knowledge, there are no books which link these two phenomena together. This book sums up the results of 222 published articles, both theoretical and experimental, which will be of great benefit to students and all researchers working in this field.

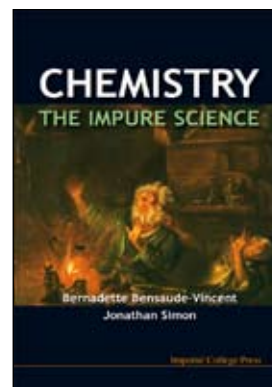
Readership: Physicists, chemists, biologists and material scientists, chemical engineers, advanced undergraduates and graduate students in science, university and college teachers.

Other Titles by the Author:

Phase Transitions: Brief Account with Modern Applications, 2004

Noisy Oscillator: First Hundred Years, From Einstein Until Now, 2005

Noisy Pendulum, 2008



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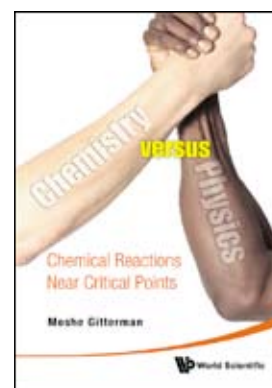
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Hardcover: 280pp

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978-1-84816-225-9

US\$68 £37



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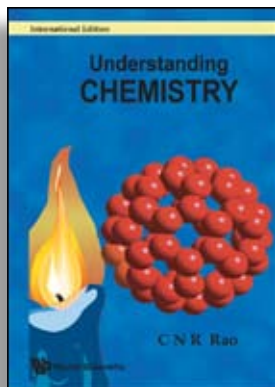
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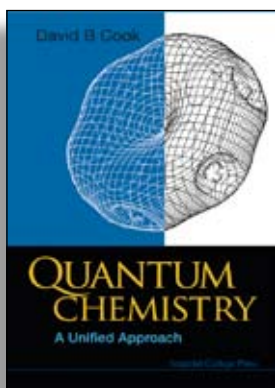
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US\$38 £29

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Hardcover: 276pp

Pub. date: Sept 2008

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US\$58 £31

UNDERSTANDING CHEMISTRY

by **C N R Rao** (*Jawaharlal Nehru Centre for Advanced Scientific Research & Indian Institute of Science, Bangalore, India*)

This is the international edition of Prof Rao's popular science book, an elementary introduction intended for high school students and others interested in appreciation of chemistry. Ideas and facts are presented, and a few questions raised, in order to interest the reader in the subject and to arouse curiosity. The book covers essential aspects of chemistry, features of the modern periodic table, bonding between atoms in molecules and substances, shapes and structures of molecules, metals and materials, alkalis and acids, carbon compounds, electronic structure of atoms, classification of elements, simple chemical reactions, biopolymers and man-made polymers and aspects of energy. There are also life sketches of chemists and procedures for a few experiments.

Readership: Science students and teachers.

QUANTUM CHEMISTRY

A Unified Approach

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

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

Readership: Chemistry undergraduates and graduate students, tutors and lecturers.

Other Titles by the Author:

Schrodinger's Mechanics, 1989

Probability and Schrodinger's Mechanics, 2002

THEORY AND EVALUATION OF SINGLE-MOLECULE SIGNALS

edited by **Eli Barkai** (*Bar Ilan University, Israel*), **Frank L H Brown** (*University of California at Santa Barbara, USA*), **Michel Orrit** (*Leiden University, Netherlands*) & **Haw Yang** (*University of California at Berkeley, USA*)

This book reviews recently developed theoretical and numerical approaches to deal with optical and mechanical signals from individual molecules. The character of data generated by single molecules, and more generally by single nano-objects, qualitatively differs from those obtained in conventional experiments on large ensembles of molecules. Fluctuations, randomness and irreproducibility are central to single-molecule measurements, and the specific methods required to extract reliable and statistically relevant information from them are presented here. With contributions mainly from participants of the "Theory, Modeling and Evaluation of Single-Molecule Measurements" workshop held in Leiden, the Netherlands, on April 16–20, 2007, this book is an authoritative compendium on the subject.

Readership: Researchers, academics and industry practitioners in life sciences, material sciences, chemistry, physics and biophysics; suitable for graduate courses on single-molecule spectroscopy and microscopy.

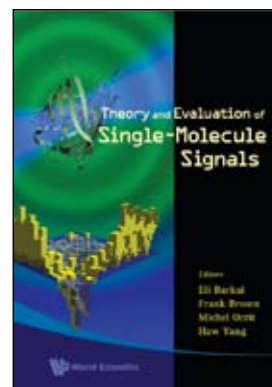
About the Editors

Michel Orrit works in the field of the interaction of light with organic condensed matter. From 1979, he worked on surface excitons in molecular crystals with Ph Kottis in Bordeaux. During a post-doctoral stay in Göttingen in 1985 with H Kuhn and D Möbius, he worked on Langmuir–Blodgett films doped with dyes. Back in Bordeaux, he used spectral hole burning to study low-temperature dynamics and molecular orientation in ultrathin molecular films. With J Bernard, he observed the fluorescence of immobilized single molecules for the first time in 1990. Since then, single-molecule fluorescence has developed quickly in several groups throughout the world, in particular towards room temperature from 1993. Since then, M Orrit's group, first in Bordeaux, then in Leiden after 2001, has applied single-molecule spectroscopy to molecular photophysics, solid state dynamics, nonlinear optics, and to other single nano-objects, semiconductor nanocrystals and metal nanoparticles.

Eli Barkai received his BSc, MSc (*summa cum laude*), and PhD (*summa cum laude*) in Physics from Tel-Aviv University. During his PhD studies, he developed a fractional kinetic framework describing anomalous transport in dynamical systems. In 1998, he joined the Chemistry department in Massachusetts Institute of Technology for his postdoctoral research, where he developed the theory of single-molecule spectroscopy. Dr Barkai joined the Physics department in Notre Dame University, Indiana, in the capacity of an Assistant Professor, in 2002. In 2004, he returned to Israel to join the Physics department at Bar-Ilan University. In 2006, he won the Krill prize for excellence in scientific research selected by the Wolf Foundation. His main research interests today are weak ergodicity breaking and photon counting statistics for single-molecule spectroscopy.

Frank L H Brown received his BS in Chemistry and BA in Applied Mathematics from UC Berkeley, and his PhD in Physical Chemistry from MIT in 1998. While at MIT, he worked with Robert Silbey on theoretical problems related to single-molecule spectroscopy in low-temperature systems. He then moved to UC San Diego to complete postdoctoral training in the labs of Kent Wilson and J Andrew McCammon, where his research focus shifted toward more biologically inspired problems.

Haw Yang received his BS in Chemistry from National Taiwan University, and his PhD in Physical Chemistry from UC Berkeley in 1999. While at UC Berkeley, he worked with Charles Harris using femtosecond IR spectroscopy to probe the mechanism of chemical bond activation by organometallic compounds in solution. He then moved to Harvard University to complete postdoctoral training in Sunney Xie's lab, where he was exposed to single-molecule spectroscopy. In 2002, Yang joined the faculty at UC Berkeley.



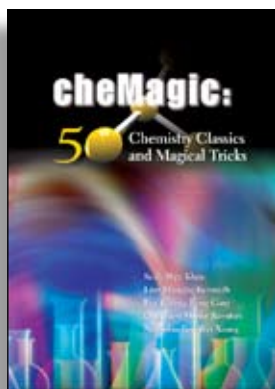
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US\$19.95 £11

cheMagic

50 Chemistry Classics and Magical Tricks

by **Seah Wee Khee, Lim Mingjie Kenneth, Lee Cheng Feng Gary**, Ong Tien Sheng **Royston**
& **Nicholas Yeo Wei Xiong** (NUS High School of Math and Science, Singapore)

An innovative book developed by NUS High School of Math and Science, Singapore, this book showcases the quality of work and the brand name of a specialist school in science. The book will attract many readers from other schools who want to understand how students experiment, explore and excel in this research-focused environment.

Readership: Students and educators of chemistry, science outreach programs, institutions and schools.

"The book has made the activities easy to conduct using step-by-step illustrations with photographs. The sections on presentation tips and safety guidelines are very well thought of and are very important for successful and responsible executions. This book will be a handy and helpful resource not just for educators and science show performers, but also for students and adults who like to try hands-on science activities. It also makes a very meaningful birthday gift to families with children — either for the kids or the parents!"

Lim Tit Meng

Asst. Chief Executive (Education Programmes), Science Centre Singapore
Associate Professor, Department of Biological Sciences, National University of Singapore

"This delightful little book is a "how to" for the budding chemical magician. It is written more for the novice magician than the novice chemist since some of the tricks require some knowledge of chemistry, but the magic is all delineated ... The authors capture the essence of magic, be it chemical, mathematical, or common slight of hand: surprise! They give advice throughout for achieving maximal effect: don't tip off the audience about what to expect. Many of these clever tricks can be done right at home with materials available at the local drug store. I highly recommend this book as a great way to (a) dazzle your friends and (b) excite students about the magical world of chemistry."

Harold B Reiter

Problems Editor, Pi Mu Epsilon Journal
Professor, University of North Carolina at Charlotte

"The text is a wonderful resource for all science lovers ... Now, with the help of this text, students can learn chemistry by doing real actions, communicating and motivating each other, and find new ideas ... Active learning is the future of education, and this text goes a long way toward helping science instructors bring about a more exciting and more student-centered learning experience. It is my hope that more teachers will read this book and learn how to "use" science for communication."

Nanako Takeda

Ritsumeikan Super Science High School, Japan

"Chemistry is an experimental science. It is through experiments that we learn Chemistry and appreciate its value in our daily life and living. The magic of Chemistry is best illustrated in the magical changes associated with a reaction or chemical transformation, or simply, a physical process. This book by NUS High is unique in its kind — it demonstrates the sheer joy, pleasure and excitement of Chemistry using simple and yet powerful experiments. It provides inspiration for many educators, students and the public at large on how Chemistry should be learnt and taught."

T S Andy Hor

Professor & Head of Chemistry, National University of Singapore
President, Singapore National Institute of Chemistry

"The authors provide an excellent introduction which focuses on maximising dramatic effect ... an excellent variety of demonstrations are described. The layout is clear and tricks are easy to find ... I would recommend to all science educators interested in inspiring and entertaining."

Chemistry World China

ROBOTICS: STATE OF THE ART AND FUTURE CHALLENGES

by **George Bekey** (University of Southern California, USA), **Robert Ambrose** (NASA Johnson Space Center, USA), **Vijay Kumar** (University of Pennsylvania, USA), **David Lavery** (NASA Headquarters, USA), **Arthur Sanderson** (Rensselaer Polytechnic Institute, USA), **Brian Wilcox** (NASA Jet Propulsion Laboratory, USA), **Junku Yuh** (Korea Aerospace University, Korea) & **Yuan Zheng** (Ohio State University, USA)

This book presents the results of an assessment of the state of robotics in Japan, South Korea, Western Europe and Australia and a comparison of robotics R&D programs in these countries with those in the United States. The comparisons include areas like robotic vehicles, space robotics, service robots, humanoid robots, networked robots, and robots for biological and medical applications, and based on criteria such as quality, scope, funding and commercialization. This important study identifies a number of areas where the traditional lead of the United States is being overtaken by developments in other countries.

Readership: Researchers and graduate students in robotics and automated systems, electrical and mechanical engineering, international economics, artificial intelligence and machine perception.



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US\$58 £31

3D ONLINE MULTIMEDIA AND GAMES

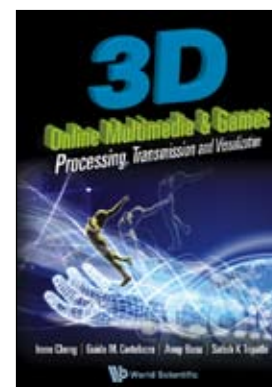
Processing, Transmission and Visualization

by **Irene Cheng** (University of Alberta, Canada & University of Pennsylvania, USA), **Guido M Cortelazzo** (University of Padova, Italy), **Anup Basu** (University of Alberta, Canada) & **Satish K Tripathi** (SUNY Buffalo, USA)

Online applications have been gaining wide acceptance among the general public. Companies like Amazon, Google, Yahoo! and NetFlicks have been doing extremely well over the last few years largely because of people becoming more comfortable and trusting of the Internet. The increasing acceptance of online products makes it increasingly important to address some of the scientific techniques involved in developing efficient 3D online systems.

The topics discussed in this book broadly cover four categories: networking issues in online multimedia; joint texture-mesh simplification and view independent transmission; view dependent transmission and server-side rendering; content and background creation; and creating simple online games.

Readership: University faculty and libraries; developers in online industry; online game developers; graduate courses in multimedia networks and 3D online multimedia; senior undergraduate courses in multimedia networks.



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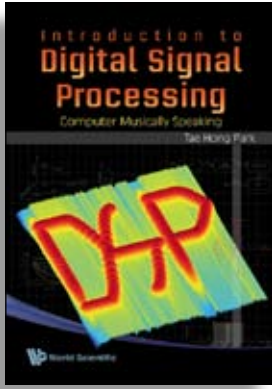
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Other Title by the Author(s):

Multimedia in Education: Adaptive Learning and Testing, 2010

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US\$38 £29

**Rights Information:**

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Hardcover: 172pp

Pub. date: Feb 2009

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US\$70 £38

INTRODUCTION TO DIGITAL SIGNAL PROCESSING

Computer Musically Speaking

by **Tae Hong Park** (*Tulane University, USA*)

This book offers an introduction to digital signal processing (DSP), with an emphasis on digital audio and computer music. It covers the mathematical foundations of DSP, important DSP theories including classic sound synthesis algorithms and effects as well as time- and frequency-domain analyses, and associated musical and sound examples. Visual and auditory feedback of the materials presented in the book is provided so that readers can become familiar and comfortable with the content in an appealing and intuitive manner. The book will thus be useful for both technically and musically trained readers alike who have a common interest in digital audio and computer music.

Readership: Undergraduate and graduate students, researchers and academics in digital audio and multimedia as well as music.

300pp (approx.)

978-981-279-027-9

981-279-027-6

Pub. date: Scheduled Summer 2009

US\$89 £48

FUNDAMENTAL CONCEPTS IN COMPUTER SCIENCE

edited by **Erol Gelenbe** (*Imperial College London, UK*) &

Jean-Pierre Kahane (*Université de Paris Sud - Orsay, France*)

This book presents fundamental contributions to computer science as written and recounted by those who made the contributions themselves. As such, it is a highly original approach to a "living history" of the field of computer science. The scope of the book is broad in that it covers all aspects of computer science, going from the theory of computation, the theory of programming, and the theory of computer system performance, all the way to computer hardware and to major numerical applications of computers.

Readership: Graduate students, academics, and professionals in the field of computer science.

Other Titles by the Author(s):

New Trends in Computer Networks, 2005

Analysis and Synthesis of Computer Systems, 2nd Ed, 2009

MATLAB

Data Analysis and Visualization

by **Antonio Siciliano** (*University of Bari, Italy*)

The book begins by looking at the main tools, in particular the Desktop, the Command and History Window, the Editor and the Help Browser. The selected number of functions, graphics objects, related properties and operators, considered fundamental in MATLAB, is a unique and remarkable feature of this book. These basic elements are minutely treated both formally and through examples. The arrangement of every data type as an array is another prominent emphasis of the book. Numerical data used in advanced mathematics usually defined as vectors or matrices are only one example. Others include logical values, strings of characters, dates, images, etc.

Readership: Undergraduate and graduate students, engineers and researchers in all science and technology fields.

Other Title by the Author:

Optics: Problems and Solutions, 2°006

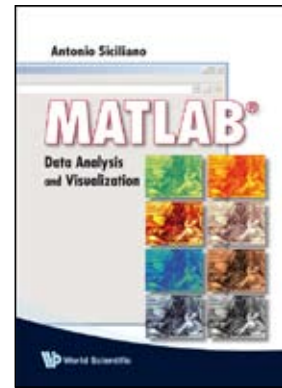
VISION: IMAGES, SIGNALS AND NEURAL NETWORKS

Models of Neural Processing in Visual Perception

by **Jeanny Hérault** (*University Joseph Fourier & Institut National Polytechnique of Grenoble, France*)

At the fascinating frontiers of neurobiology, mathematics and psychophysics, this book addresses the problem of human and computer vision on the basis of cognitive modeling. After recalling the physics of light and its transformation through media and optics, Hérault presents the principles of the primate's visual system in terms of anatomy and functionality. Then, the neuronal circuitry of the retina is analyzed in terms of spatio-temporal filtering. This basic model is extended to the concept of neuromorphic circuits for motion processing and to the processing of color in the retina. For more in-depth studies, the adaptive non-linear properties of the photoreceptors and of ganglion cells are addressed, exhibiting all the power of the retinal pre-processing of images as a system of information cleaning suitable for further cortical processing. As a target of retinal information, the primary visual area is presented as a bank of filters able to extract valuable descriptors of images, suitable for categorization and recognition and also for local information extraction such as saliency and perspective. All along the book, many comparisons between the models and human perception are discussed as well as detailed applications to computer vision.

Readership: Students, teachers and researchers in human vision modeling.

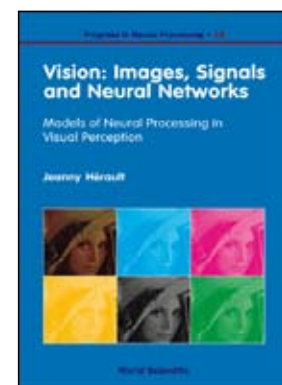


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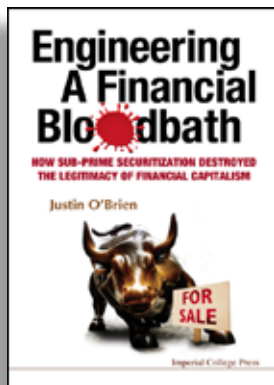
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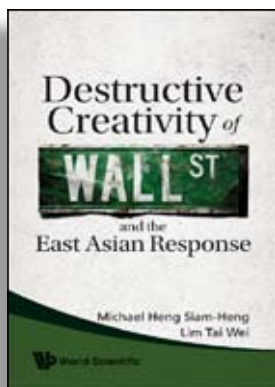
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US\$38 £29



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Hardcover: 268pp

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US\$24.95 £19

ENGINEERING A FINANCIAL BLOODBATH

How Sub-Prime Securitization Destroyed the Legitimacy of Financial Capitalism
by **Justin O'Brien** (*Queensland University of Technology, Brisbane, Australia; University of Glasgow, UK and Centre for Applied Philosophy and Public Ethics, Australian National University, Canberra, Australia*)

This book investigates the origins and implications of the securitization crisis, described by the chief executive of ANZ as a “financial services bloodbath”. Based on extensive interviews, it offers an integrated series of case studies drawn from the United States, the United Kingdom and Australia. A central purpose is to not only chart what went wrong within the investment houses and why the regulatory systems failed, but also provide policy guidance. The book therefore combines the empirical with the normative. In so doing, it provides a route map to navigate one of the most significant financial and regulatory failures in modern times.

Readership: General informed public, particularly readers of business publications such as the *Financial Times*, *Wall Street Journal* or *Australian Financial Review*; academics in political economy, governance and law; policymakers involved in the regulation of financial markets.

DESTRUCTIVE CREATIVITY OF WALL STREET AND THE EAST ASIAN RESPONSE

by **Michael Heng Siam-Heng & Lim Tai Wei** (*East Asian Institute, National University of Singapore, Singapore*)

This book seeks to address the critical issues in deregulation, derivatives, leveraging, remuneration systems, and rating agencies. It will also examine Asia’s response and why Asian economies have been less affected by the global financial crisis. Are corporate governance, culture, management styles or even a state-led model the main reasons? Would the Asian sovereign funds help to be the last line of defense against the excesses of the crisis? Is the US\$80 billion Asian crisis fund envisaged as the first instance of a coordinated East Asian response to the crisis and would this truly underpin the creation of an East Asian regional order? This book reaffirms the need for banks and financial institutions to provide value-adding services, exercise prudence and due diligence and pay due regard for societal interest.

Readership: General readers, who are interested to learn more about the financial crises and/or interested in the area studies of China and Japan.

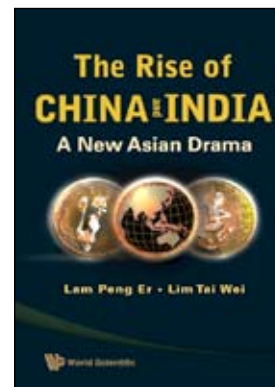
THE RISE OF CHINA AND INDIA

A New Asian Drama

edited by **Lam Peng Er** & **Lim Tai Wei** (*East Asian Institute, National University of Singapore, Singapore*)

The most remarkable phenomenon in Asia in the 21st century is arguably the economic rise of China and India. Amazingly, the two most populous countries in the world are uplifting millions of their citizens annually from poverty through rapid economic growth. What is the impact on the region, given the ascendance of China and India? There are at least two possible outcomes: the rise of the two great Asian powers may challenge the US and instill fear among the smaller countries in Asia, or, China and India will act as new economic dynamos that will benefit the region even if US economic presence in the region is to decline in the future. This book explores the opportunities and obstacles to a "harmonious" region underpinned by the rise of China and India.

Readership: Students, academics and general public interested in Chinese and Indian economies.



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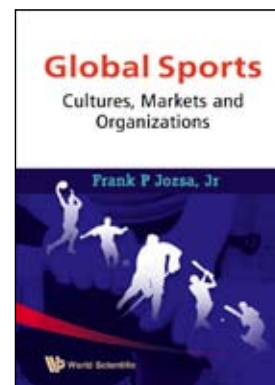
GLOBAL SPORTS

Cultures, Markets and Organizations

by **Frank P Jozsa, Jr** (*Pfeiffer University, USA*)

This interesting book discusses the emergence and development of five extremely popular team sports — baseball, basketball, football-soccer, ice hockey and cricket — since the 1800s in 15 different countries. It addresses some of the most provocative, recent and unique economic and business issues associated with team sports in the various nations. For example, to what extent has each of these spectator sports prospered as industries, and will they expand into other regions of the world during the early to mid-2000s? This book answers these questions, and compares the performances of each country's amateur, semiprofessional and/or professional sports leagues and their respective teams by providing detailed statistics and other relevant historical information.

Readership: Academics, researchers and undergraduate and graduate students in sports business, sports economics, sports history and international relations; administrators, executives and other officials employed in amateur, semiprofessional and/or professional sports organizations.



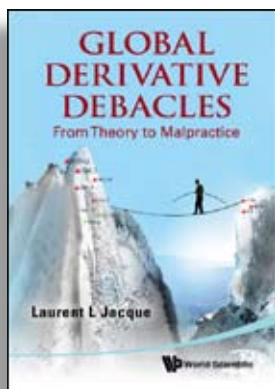
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US\$45 £34

**Rights Information:**

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Hardcover: 200pp (approx.)

Pub. date: Spring 2010

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US\$54 £41

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 going back to Citibank's forex losses in its Belgian branch in 1964, to Amaranth's \$5.4 billion loss on gas futures in 2006 and Societe Generale's loss of \$7.8 billion in early 2008.

Contrary to widespread belief, derivatives products are welfare-enhancing from a macroeconomic point of view. Unfortunately, financial innovations are used and abused by financial institutions and corporations when control systems are not properly designed. The proliferation of financial derivatives does not increase systemic risk but allows players in speculative markets to optimize their risk-return profile in line with their strategic goals and comparative advantages in the marketplace. Regulation is not necessarily called for; instead, proper guidelines for the use and monitoring of derivatives by firms should be established and enforced.

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

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

"This timely and well-written book is a 'must read' for anyone directly or indirectly involved in financial markets and instruments as well as risk management. By telling actual stories of how rogue traders and incompetent managers put their firms at risk, the author demystifies the complex world of financial derivatives. His incisive and in-depth analysis of all major derivatives debacles should help the reader understand what happened and avoid future disasters."

Gabriel Hawawini

The Henry Grunfeld Professor of Investment Banking, INSEAD

"The author has written a book whose clarity makes it accessible to a wide range of practitioners and executives, and he brings the technical subject matter to life through the concrete examples of the highest profile failures in the use of derivatives."

B Craig Owens

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"The book is a timely contribution to a subject that has been at the epicenter of the current financial crisis. Learning from past mistakes and applying the lessons in a theoretical, empirical, and foremost practical manner is what sets this book apart. Most importantly, the book sheds light on financial engineering complexity during a time and age when regulators are set to turn back the clock of financial engineering via potentially draconian regulatory actions."

Dr Oliver S Kratz

Head of Global Thematic Equities, Deutsche Bank

About the Author

Laurent L. Jacque is the Walter B Wriston Professor of International Finance & Banking at the Fletcher School of Law and Diplomacy (Tufts University) and Director of its International Business Studies Program. He is the author of two books — *Management and Control of Foreign Exchange Risk* (Kluwer Academic Publishers, 1996), and *Management of Foreign Exchange Risk: Theory and Praxis* (Lexington Books, 1978) — as well as many articles on International Risk Management, Multinational Control Systems and Capital Markets. He served as an advisor and consultant to the Foreign Exchange Rate Forecasting Service of Wharton Econometrics, Forecasting Associates (1982–1990) and as a member of Water Technologies Inc's board of directors (1991–1994). Jacque received the James L Paddock award for teaching excellence at The Fletcher School in 1996. He is a consultant to a number of firms in the area of corporate finance and risk management and has taught in many Management Development Programs, including Manufacturers Hanover Trust, Merck, Sharp & Dohme, Philadelphia National Bank, General Motors, Bunge and Born (Brazil), Rhone-Poulenc (France), Siam Commercial Bank (Thailand), Daewoo (South Korea), General Electric, Dupont de Nemours, Norwest Bank, Bangkok Bank (Thailand), INSEAD, Pechiney, Petrobras and the IFC (World Bank group).

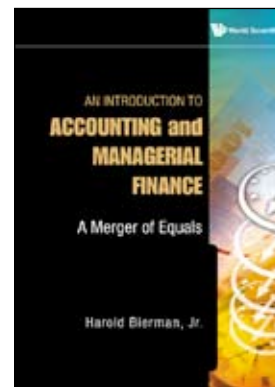
AN INTRODUCTION TO ACCOUNTING AND MANAGERIAL FINANCE

A Merger of Equals

by **Harold Bierman, Jr.** (Cornell University, USA)

This book introduces corporate financial management, based on the basic capital budgeting framework and the time value of money. It focuses on theoretical formulations and correct application of financial techniques that will help improve managerial and financial decisions. Based on fundamental principles of accounting and finance like time value of money and after-tax cash flows, it introduces readers to real-world constraints and complexities in the two fields. Written in a simple and accessible manner, this book can be read by students of finance and accounting courses, business professionals and general public alike.

Readership: Undergraduates and graduates in economics & finance; business professionals interested in mergers and organizations.



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THE MAKING OF ECONOMICS

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Volume II: The Modern Superstructure

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

Volume II in *The Making of Economics, 4th Edition* series fills a major gap in the literature of economics, providing in brief fashion a complete treatment of high theory in economics. Like Volume I, the book is accessible to the intelligent reader, be they advanced undergraduate or graduate students, laypeople, or professors of economics and finance. The author walks the reader through the maze of contemporary economics, acquainting them with the most up-to-date theories as well as recent economic history. The learning tasks are eased by volleys of examples as well as dramatic illustrations. The progression is from neoclassical Keynesian economics to monetarism, continuing with mathematical economics and econometrics, the theory of economic growth, the new classical economics, game theory, experimental economics, and global economics. For example, common threads between Smithian classical economics and new classical economics are woven into the fabric of discussions directing the way to the higher theory. The new chapters on mathematics and econometrics, game theory, experimental economics, and globalization are not to be found in other surveys of what the author calls the "Modern Superstructure of Economics." Although designed to be used with Volume I, it can also stand alone as a text or textbook supplement for a wide range of courses in economics and finance.

Readership: Advanced undergraduates, graduate students, and interested professors in economics and finance; laypeople.



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THE MAKING OF ECONOMICS

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Volume III: The Radical Assault

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

This book is the first in the field to cover exclusively the modern radical economists. Science has always had its radicals; economics is unexceptional in this regard. The book begins with the persona of Karl Marx and his soulmate Friedrich Engels, the most radical of all, continuing with the central ideas of Marx, including his theory of capitalism and an understanding of why, in Marx's view, capitalism is doomed. Thereafter, Thorstein Veblen fills the role as the USA radical who founded the only uniquely American school of economics — the institutionalist school. This is followed by Joseph Schumpeter and his theory of capitalist motion. According to Schumpeter, the demise of capitalism is self-inflicted through creative destruction. The bestselling authors, Robert Heilbroner and John Kenneth Galbraith, straddle both the institutionalist and Post Keynesian schools. The new left radicals emanated from Galbraith's Harvard University and are still around today. The heyday of the new right came during the administration of Ronald Reagan and was led by the neo-Austrians. Finally, the book concludes by analyzing the Post Keynesians' claim to be the legitimate heirs to Keynesianism. Thus far, they fall into the radical camp.

Readership: Advanced undergraduates, graduate students, interested professors in economics and finance, and lay people.

Other Titles by the Author:

Wall Street Capitalism: The History of the Bondholding Class, 2000

Brief History of Economics: Artful Approaches to the Dismal Science, 2001 (Russian rights granted to FGUP; Portuguese rights granted to Instituto Piaget; Arabic rights granted to National Center For Translation; Korean rights granted to Ulyuck Publishing Co.; Simplified Chinese rights granted to China Renmin University Press)

Making of Economics, 4th Ed, Vol 1: The Foundation, 2003

Alan Greenspan: Oracle Behind the Curtain, 2006

Brief History of Economics: Artful Approaches to the Dismal Science, 2nd Ed, 2010

Encyclopedic Guide to the History of Economics Through Keynes, Vol 1, 2011

Encyclopedic Guide to the History of Economics Through Keynes, Vol 2, 2011

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.

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

HANDBOOK OF COASTAL AND OCEAN ENGINEERING

edited by **Young C Kim** (*California State University, Los Angeles, USA*)

This handbook contains a comprehensive compilation of topics that are at the forefront of many of the technical advances in ocean waves, coastal, and ocean engineering. More than 70 internationally recognized authorities in the field of coastal and ocean engineering have contributed articles on their areas of expertise to this handbook. These international luminaries are from highly respected universities and renowned research and consulting organizations from all over the world.

This handbook provides a comprehensive overview of shallow-water waves, water level fluctuations, coastal and offshore structures, port and harbors, coastal sediment processes, environmental problems, coastal hazards, physical modeling, and other issues in coastal and ocean engineering. It is an essential reference for professionals and researchers in the areas of coastal engineering, ocean engineering, oceanography, and meteorology, as well as an invaluable text for graduate students in these fields.

Readership: Graduate students, researchers and professionals in coastal and ocean engineering, oceanography and meteorology.

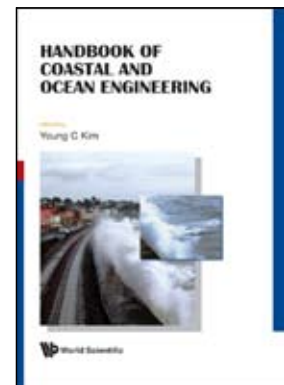
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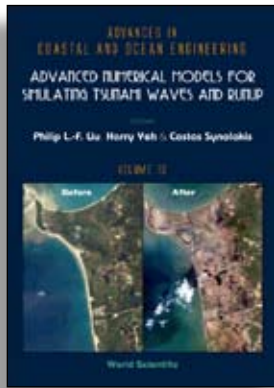
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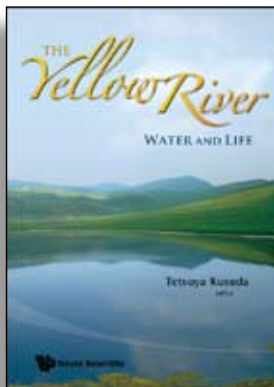
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ADVANCED NUMERICAL MODELS FOR SIMULATING TSUNAMI WAVES AND RUNUP

edited by **Philip L-F Liu** (*Cornell University, USA*), **Harry Yeh** (*Oregon State University, USA*)
& **Costas Synolakis** (*University of Southern California, USA*)

This review volume is divided into two parts. The first part includes five review papers on various numerical models. Pedersen provides a brief but thorough review of the theoretical background for depth-integrated wave equations, which are employed to simulate tsunami runup. LeVeque and George describe high-resolution finite volume methods for solving the nonlinear shallow water equations. The focus of their discussion is on the applications of these methods to tsunami runup. The second part of the review volume contains the descriptions of the benchmark problems with eleven extended abstracts submitted by the workshop participants. All these papers are compared with their numerical results with benchmark solutions.

Readership: Graduate students and researchers in ocean and coastal engineering.

THE YELLOW RIVER

Water and Life

edited by **Tetsuya Kusuda** (*Kyushu University, Japan*)

The Yellow River basin, located in the semi-arid and arid climate zones in northern China is confronted with serious problems of water deficit as well as water pollution. In order to understand the current state of water resources in the basin and to provide a way of thinking about the issues, this book systematically explains the methods of modeling, mechanism of water circulation on each element and several technologies for water saving. It also introduces cutting-edge research results of the five-year project "improving the sustainability in utilizing and controlling water in the Yellow River basin" sponsored by Japan Science and Technology Corporation (JST).

Readership: Graduate students, researchers and practitioners in civil engineering, environmental science and hydrology.

INTRODUCTION TO MICROMECHANICS AND NANOMECHANICS

by **Shaofan Li** (University of California at Berkeley, USA) &
Gang Wang (Hong Kong University of Science and Technology, China)

This book provides both the theoretical foundation, as well as the authors' latest contributions to micromechanics and its applications in nanomechanics, nanocomposites, dislocation and thin film theories, and configurational mechanics theory. It serves primarily as a graduate level textbook, intended for first year graduate students in materials science, applied computational mechanics, nano-science and technology, and mechanical engineering. This book also serves as a research monograph by compiling recent developments in dislocation dynamics, numerical simulations of material failure, and homogenization theories.

"This new book furnishes a most comprehensive and self-contained introduction to the state-of-the-art knowledge of micromechanics and nanomechanics. In addition, the way that the book is organized is very logical, and the presentation is quite clear, and the examples and excises included are excellent. These make the book very suitable and competitive as an excellent textbook and an indispensable reference for professors, graduate students and researchers who desire to learn and to contribute to the subject."

Xin-Lin Gao, Associate Professor
Texas A&M University

"With many references and illustrations, this book certainly deserves the accolade far-reaching. The presentation of these results is necessary for people working in the fields of materials science, applied computational mechanics, nano-science and technology, and mechanical engineering."

Professor Huiling Duan
Beijing University

FUNDAMENTALS OF TRIBOLOGY

by **R Gohar** (Imperial College London, UK) & **H Rahnejat** (Loughborough University, UK)

This book covers tribology in such a way as to provide simple approximate solutions to frequent practical problems. Unlike previous books, which catered for earlier generations of undergraduates, today's students generally have sophisticated computer systems available in their colleges. Therefore, many of the worked and set examples in the book are made easier by using readily available software such as Math CAD. Readers will thus gain practice in using it, and will benefit in general by understanding the mathematical principles involved in the solutions. This book is particularly useful to engineering undergraduates and practicing engineers needing a quick solution to tribological problems.

"This new book is very comprehensive and the authors emphasize that the book includes the latest contributions from outstanding researchers ... the readers can find a good overview of some fundamental problems of tribology in this book."

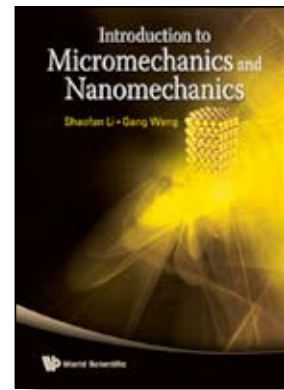
Professor Huiling Duan
Beijing University

"Questions and answers at the end of the book make it an appropriate text for an undergraduate course in materials science or mechanical engineering ... this textbook does provide the reader with a solid background in the theory of tribology."

IEEE Electrical Insulation Magazine

Other Title by the Author(s):

Elastohydrodynamics, 2nd Ed, 2001



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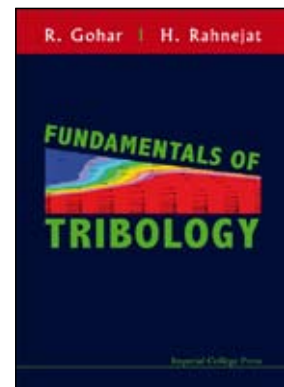
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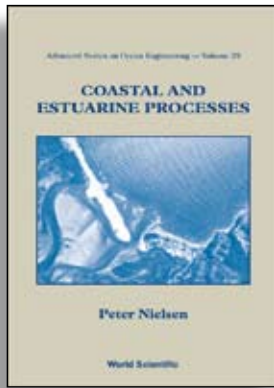


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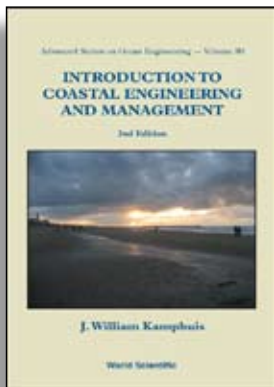
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COASTAL AND ESTUARINE PROCESSES

by **Peter Nielsen** (*The University of Queensland, Australia*)

This book is an introductory treatment to coastal and estuarine processes for earth scientists or engineers. Suitable for a first course on the subject, it covers water waves, surf zone hydrodynamics, tides in oceans and estuaries, storm surges, estuarine mixing, basic sediment transport, coastal morphodynamics and coastal groundwater dynamics. To serve as an effective reference book for professionals, the book is fully indexed and comprehensively cross referenced.

Other Title by the Author:

Coastal Bottom Boundary Layers and Sediment Transport, 1992

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 contemporary issues, such as consequences of failure, impacts of rising sea levels, aging infrastructure, real estate development and contemporary decision making, design and education. 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 current topics of failure and resilience that surfaced as a result of recent disasters from hurricane surges and tsunamis. It also 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.

RAPID PROTOTYPING

Principles and Applications

3rd Edition

(with Companion CD-ROM)



by **C K Chua, K F Leong & 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.

"This is the most comprehensive and relevant textbook in the field of rapid prototyping. Whenever I teach subjects related to rapid product development I use this book as a reference. My students much appreciate the easy way the information is introduced. This is an excellent book for both undergraduate and postgraduate students."

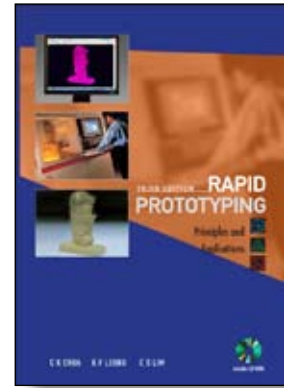
Paulo Jorge Bártolo
Polytechnic Institute of Leiria
Portugal

"This book sits in a special place on my bookshelf. If you don't have it, get it. Thank you, Professors Chua, Leong and Lim, for producing such an outstanding book ..."

Terry Wohlers
President of Wohlers Associates, Inc.
Colorado, USA

"To date, this is the only published text on RP that can be recommended to undergraduate students. Whenever I start my students off on a project that involves RP, and they say 'what is RP?', this is the book I give them to read. This book is an excellent introduction to RP."

Dr Ian Gibson
Co-Editor of Rapid Prototyping Journal
MCB Press, UK



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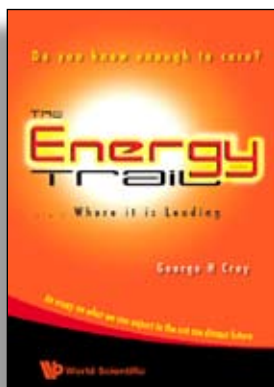
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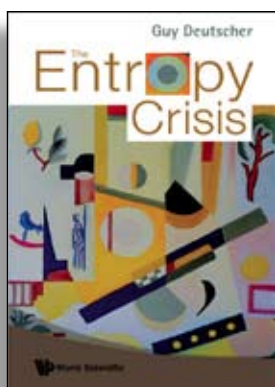
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US\$28 £15

THE ENERGY TRAIL — WHERE IT IS LEADING

Do You Know Enough to Care?

by **George H Croy** (*Society of Petroleum Engineers (SPE); South East Asia Petroleum Exploration Society (SEAPEX); Technical Journal Editor (retired) & Freelance Writer*)

This book describes the effect that hydrocarbon energy (oil, gas and coal) has had on human evolution, how we got to the stage we are at today, what we are doing about it and where it will lead us in the not-too-distant future. The book is not speculation, but rather a collection of provable information based on verifiable facts which readers are encouraged to research for themselves so as to make an informed decision on how these facts will affect the future of mankind. The book covers the future of the human race, not just the decline of non-renewable resources such as oil and gas. It is designed to make people think out of the box rather than merely accept the results as they happen.

Readership: General population (from post-secondary students to retirees) with a specific interest in the use of energy; undergraduates as well as graduates in energy studies, economics, city development.

THE ENTROPY CRISIS

by **Guy Deutscher** (*Tel Aviv University, Israel*)

Examples taken from daily experiences are used to introduce the concept of entropy in an intuitive manner, before it is defined in a more formal way. It is shown that the entropy increase due to irreversible transformations (or “unrecoverable” energy) simultaneously determines the level of fresh energy supplies of our society and the damage that it causes to the environment. Minimizing the rate of entropy increase with advanced technologies and society organizations, and keeping it in check with appropriate energy sources, is the key to a sustainable development.

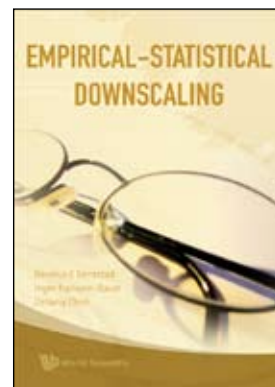
Readership: Students, academics, public policy makers or anyone interested in environmental and energy issues.

EMPIRICAL-STATISTICAL DOWNSCALING

by **Rasmus E Benestad, Inger Hanssen-Bauer** (*The Norwegian Meteorological Institute, Norway*) & **Deliang Chen** (*University of Gothenburg, Sweden*)

Empirical-statistical downscaling (ESD) is a method for estimating how local climatic variables are affected by large-scale climatic conditions. ESD has been applied to local climate/weather studies for years, but there are few — if any — textbooks on the subject. It is also anticipated that ESD will become more important and commonplace in the future, as anthropogenic global warming proceeds. Thus, a textbook on ESD will be important for next-generation climate scientists.

Readership: Graduate students, academics and researchers in the field of climatology, geography and hydrology.



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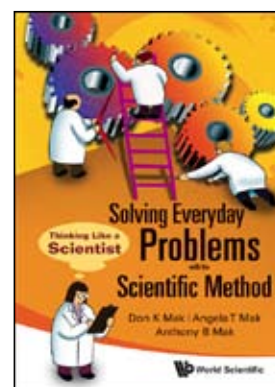
SOLVING EVERYDAY PROBLEMS WITH THE SCIENTIFIC METHOD

Thinking Like a Scientist

by **Don K Mak, Angela T Mak & Anthony B Mak**

This book describes how one can use The Scientific Method to solve everyday problems including medical ailments, health issues, money management, traveling, shopping, cooking, household chores, etc. It illustrates how to exploit the information collected from our five senses, how to solve problems when no information is available for the present problem situation, how to increase our chances of success by redefining a problem, and how to extrapolate our capabilities by seeing a relationship among heretofore unrelated concepts.

Readership: General public interested in self-help books; undergraduates majoring in education and behavioral psychology; graduates and researchers with research interests in problem solving, creativity and scientific research methodology.



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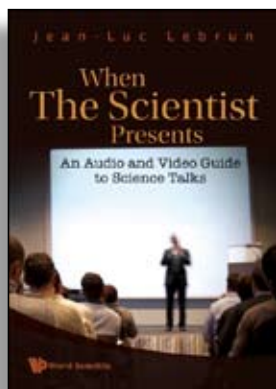
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WHEN THE SCIENTIST PRESENTS

An Audio and Video Guide to Science Talks
(With DVD-ROM)



by **Jean-Luc Lebrun** (Trainer of researchers and scientists from A*STAR Research Institutes, Singapore & Former Director, Apple-ISS Research Centre, Singapore)

The author takes an original human factor view of the presentation delivery, in which the audience is easily distracted, rapidly forgetful, and increasingly impatient. Thus, insightful pointers are given on how to deliver the talk, how to craft the slides, and how to prevent the computer from rendering the presenting host-scientist into a “ghost”. In addition, the book goes in-depth over the treatment of questions by examining the motives and style of the questioners, and advising on how best to answer to each type of questioner. The book comes with a DVD for audio and video examples, and includes essential PowerPoint and Keynote techniques that a presenter cannot live without.

Readership: Students, graduates, postgraduates, and professionals seeking help in improving their scientific presentation skills.

“In this masterful and enlightening contribution, Lebrun builds on his reader and writer’s guide to ‘Scientific Writing’ to expose the essential ingredients of effective scientific presentations. Fresh and entertaining, full of practical advice and highly readable, this is a most instructive and enjoyable work. Postgraduate students, supervisors and many an experienced researcher will welcome and benefit tremendously from this book, together with its wealth of accompanying resources, as an essential guide to effective communication.”

Alastair Curry
Royal University of Phnom Penh, Cambodia &
Formerly Senior Lecturer, University of Hertfordshire, UK

“This is by light-years the best guide to designing and presenting lectures. Lebrun writes in a lively, direct way, and every page is brimming with good sense and practical hints. It’s just plain fun to read When the Scientist Presents, even if your lecture is perfect!”

Roald Hoffmann
Nobel laureate in Chemistry and writer

“Finally! A comprehensive, engaging book full of practical tips to improve the organization, the delivery, and visuals of scientific presentations. If you are serious about your professional success, then I strongly recommend you read this book.”

**Communication Expert &
Blogger at “TheArtofSpeakingScience.com”**

Other Title by the Author(s):

Scientific Writing: A Reader and Writer’s Guide, 2007 (Simplified Chinese rights granted to Science Press Ltd)

COMETS AND THE ORIGIN OF LIFE

by **Chandra Wickramasinghe, Janaki Wickramasinghe & William Napier**
(Cardiff University, UK)

The recent surge of interest in astrobiology has led to a spate of books in astrobiology — combining astronomy and biology — but in most of these, cometary panspermia is dealt with only cursorily. The present book sets out the case for cometary panspermia in a cogent way, combining evidence from space science, celestial mechanics, geology and microbiology. It should be an essential part of any university course on astrobiology, and also serve as a reference textbook for researchers in the field.

Readership: General scientific audience, astronomers, undergraduates in astrobiology.

"This book provides a very cogent, scientific and orderly review of the Hoyle-Wickramasinghe revival of the ancient theory of panspermia."

Professor Gilbert V Levin
Arizona State University

Other Title by the Author(s):

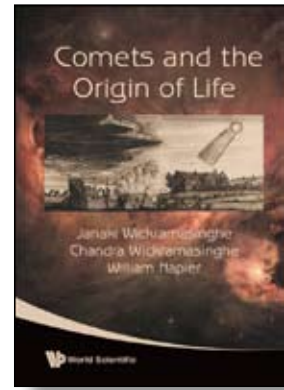
Journey with Fred Hoyle: The Search for Cosmic Life, 2005

SCIENCE RESEARCH WRITING FOR NON-NATIVE SPEAKERS OF ENGLISH

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

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.



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Pub. date: Fall 2009

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Pub. date: Winter 2009

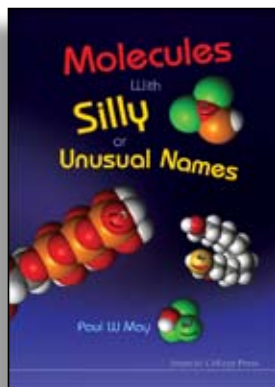
978-1-84816-309-6

US\$68 £51

Paperback: 280pp (approx.)

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US\$38 £29

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US\$98 £74

Paperback: 436pp

978-1-84816-273-0(pbk)

US\$56 £42

MOLECULES WITH SILLY OR UNUSUAL NAMES

by **Paul W May** (University of Bristol, UK)

This popular science book shows that chemists do have a sense of humor, and this book is a celebration of the quirky side of scientific nomenclature. Here, some molecules are shown that have unusual, rude, ridiculous or downright silly names. Written in an easy-to-read style, anyone — not just scientists — can appreciate the content. Each molecule is illustrated with a photograph and/or image that relates directly or indirectly to its name and molecular structure. Thus, the book is not only entertaining, but also educational.

Readership: General public, science students, academics, medics and industrial scientists.

"... it would make an excellent present for a chemist, giving hours of enjoyment over the holiday period."

Chemistry World

TIME, SPACE, STARS AND MAN

The Story of the Big Bang

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

Starting with the creation of space and time — known as the Big Bang — the book traces causally related steps through the formation of matter, of stars and planets, the Earth itself, the evolution of the Earth's surface and atmosphere, and then through to the beginnings of life and the evolution of man. The material is presented in such a way that a non-scientist can comprehend it, without using formulae or equations but still preserving the integrity of the involved science. This book does not solve the mysteries of what initiated the Big Bang or how life evolved from inanimate matter, but it does make clear the nature of those problems. The reader will be left with a sense of wonderment that he or she actually exists!

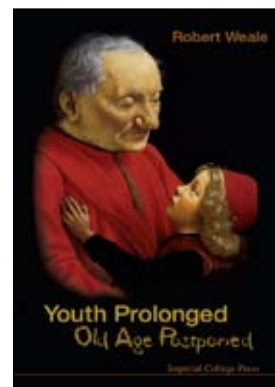
Readership: Primary readership for those interested in popular science. May be used as a textbook for undergraduates or even high school students at the sixth-form level, or for non-science students taking science as a subsidiary level.

YOUTH PROLONGED: OLD AGE POSTPONED

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

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.



Rights Information:

Non-English language rights available.

Hardcover: 180pp (approx.)

Pub. date: Fall 2009

978-1-84816-507-6(pbk)

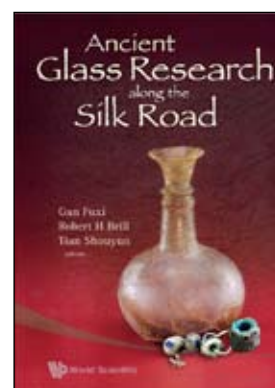
US\$24.95 £19

ANCIENT GLASS RESEARCH ALONG THE SILK ROAD

edited by **Gan Fuxi** (*Chinese Academy of Sciences & Fudan University, China*),
Robert Brill (*The Corning Museum of Glass, USA*) & **Tian Shouyun** (*Chinese Academy of Sciences, China*)

This book, for the first time, traces the origin, evolution and spreading of ancient Chinese glass technology. It collects a wealth of data contributed by Chinese and foreign experts regarding the history and background, visual characteristics and chemical compositions of the unearthed ancient glasses from along the Northern (Oasis) Silk Road, especially from the Xinjiang Province (known as the "Western Region" in ancient times). The book presents new results of the studies on ancient glasses along the Southern and Sea Silk Roads, and discusses the influence of the Silk Road on ancient Chinese glass technology and art.

Readership: Graduates and researchers in the field of glass science and technology, archeology, museum, and history of science.



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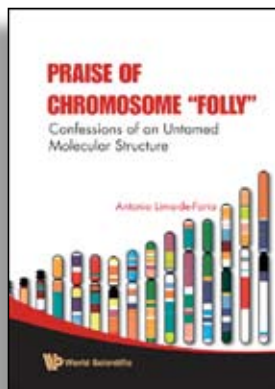
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Hardcover: 496pp

Pub. date: Mar 2009

978-981-283-356-3

US\$85 £64

**Rights Information:**

Non-English language
(except Russian)
rights available.

Hardcover: 428pp

Pub. date: Sept 2008

978-981-281-479-1

US\$78 £42

Paperback: 428pp

978-981-281-094-6(pbk)

US\$48 £26

PRAISE OF CHROMOSOME "FOLLY"

Confessions of an Untamed Molecular Structure

by **Antonio Lima-de-Faria** (Lund University, Sweden)

This timely book contains the latest information on the molecular organization of the chromosome. The information is original and is presented in an unorthodox way, while carefully chosen elucidating and attractive figures serve to add clarity to the subject treated. Thus, the book will add greatly to the general debate on the evolution of living organisms, and will be of particular interest to those in the biotechnological field.

Readership: General educated public, geneticists, evolutionists, molecular biologists and biotech industry specialists.

"As always, you impress by a high standard of English. Your book is a combination of science, philosophy and aspects of art, actually being an art piece."

Professor Dr Harry Scherthan
Munich, Germany

"I wish to say that I enjoy its originality, novelty of ideas and clarity".

Professor Dr Alexander Spirin
Moscow, Member of Russian Academy of Sciences

"I just want to let you know that I have read your book and found it very interesting and very well written".

Senior Publisher Dr Anne Bindslev
Stockholm, Sweden

"I've enjoyed your latter book. It's so clear, direct and well written, and at the same time so rich in updated, solid, and eyewitnessed information, that one may call it a gem."

Publisher Dr Stefano Serafini
Rome, Italy

"An extraordinary work that will fascinate a large audience due to its lucid and novel perspective of chromosome evolution".

Professor Dr Beatriz Porto
Biomedical Sciences Institute, Porto University, Portugal

"I have enjoyed reading your book and will do my best to preserve the specificity and I would say beauty of your original text in Russian translation".

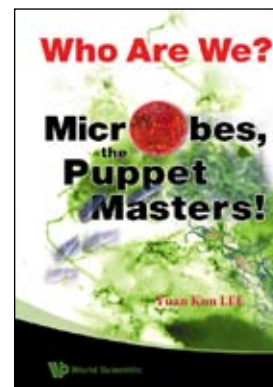
Professor Dr Sergey Razin
Moscow, Member of Institute of Gene Biology and of Russian Academy of Sciences

WHO ARE WE? MICROBES, THE PUPPET MASTERS!

by **Yuan Kun Lee** (*National University of Singapore, Singapore*)

We have been invaded by “body snatchers” and they are part of us! We could postulate that we are carrying a large number of DNAs that serve only the DNAs, and we are just a small part of the big picture! There is ample scientific evidence to suggest that, even today, free-living microbes are still manipulating our behaviour and our life at large. They are thriving on our wet skin, in our mouth, and in our intestinal and vaginal tracts. We are perhaps not quite what we think we are. This thought-provoking and inspiring book offers many answers, while at the same time raising many questions for future research.

Readership: Life science students and general public.



Rights Information:

Non-English language rights available.

Paperback: 96pp

Pub. date: Dec 2008

978-981-283-560-4(pbk)

US\$22 £12

THE THIN BONE VAULT

The Origin of Human Intelligence

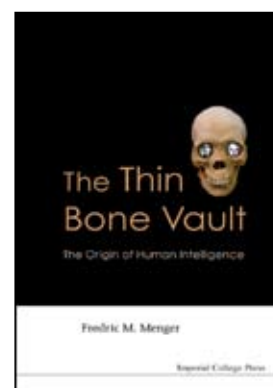
by **Fredric M Menger** (*Emory University, USA*)

This book delves into one of the greatest riddles perplexing modern science: “Why are humans so smart?” In a format understandable even by the non-expert, the author investigates the origins of human intelligence, starting with classical Darwinian concepts. Thus, the strengths and beauty of natural selection are presented with many examples taken from natural history. Common criticisms of Darwin, from scientists and non-scientists alike, are confronted and shown to be either inconclusive or outright false.

The author then launches into a discussion of human intelligence, the most important feature of human evolution, and how it cannot be fully explained by mutational selection. Modern humans are smarter than what is demanded by our evolutionary experience as hunter-gatherers. The difficulty lies in the inability of natural selection to answer the following question: how can a complex set of genes, controlling expensive traits with little immediate benefit, come into permanent existence within a short time period in every member of a small population (which was dispersed and geographically isolated over a huge planet) which had a low reproductive output and a low mutation rate?

The book concludes with a speculative epigenetic theory of intelligence that does not require DNA mutations as a source of evolution. Although the book is comprehensible by anyone with a college education, this last section in particular should intrigue both layman and expert alike.

Readership: General public; biology and anthropology undergraduates and graduates.



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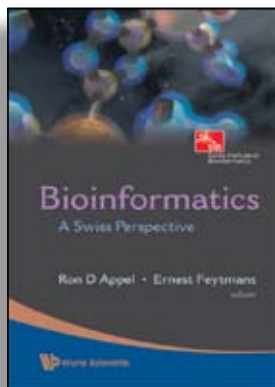
Non-English language rights available.

Hardcover: 312pp

Pub. date: Feb 2009

978-1-84816-336-2

US\$58 £44

**Rights Information:**

Non-English language rights available.

Hardcover: 464pp

Pub. date: Apr 2009

978-981-283-877-3

US\$130 £98

**Rights Information:**

Non-English language rights available.

Paperback: 152pp

Pub. date: Aug 2008

978-981-283-448-5(pbk)

US\$26 £15

BIOINFORMATICS

A Swiss Perspective

edited by **Ron D Appel & Ernest Feytmans** (*Swiss Institute of Bioinformatics, Switzerland*)

The Swiss Institute of Bioinformatics (SIB), which has celebrated its 10th anniversary in 2008, is an institution of national importance, recognized worldwide for its state-of-the-art work. Organized as a federation of bioinformatics research groups from Swiss universities and research institutes, the SIB provides services to the life science community that are highly appreciated worldwide, and coordinates research and education in bioinformatics nationwide. This book provides an insight into some of the key areas of activity in bioinformatics in Switzerland. With contributions from SIB members, it covers both research work and major infrastructure efforts in genome and gene expression analysis, investigations on proteins and proteomes, evolutionary bioinformatics, and modeling of biological systems.

Readership: Bioinformaticians, computational biologists, and biologists; advanced undergraduate and graduate students in bioinformatics, biology, medicine, and biochemistry; non-expert audience interested in bioinformatics.

T.H.E. A2z DIET

Dieting Made as Simple as Possible

by **Y E O Adrian** (*M.A., Ph.D. (Cambridge); Honorary Fellow, Christ's College, Cambridge University*)

This invaluable book explains, in simple language, why we overeat, and why we find food that is salty, fatty and sweet so tempting and addictive. It then zooms into the simplest and most basic principles of effective dieting, which the author himself has used over the past 25 years with success. The book distills only what is absolutely necessary. Incorporating a simple graphing record of daily progress, The A2z Diet will motivate those who desire a slimmer, healthier and fitter body to achieve the results that they seek.

Readership: General.

PHYSICAL BIOLOGY

From Atoms to Medicine

edited by **Ahmed H Zewail** (*California Institute of Technology, USA*)

This is an avant-garde book edited by Nobel Laureate Ahmed Zewail with contributions from eminent scientists including four Nobel prize winners. The perspectives of these world leaders in physics, chemistry, and biology define potential new frontiers at the interface of disciplines and including physical, systems, and synthetic biology.

This book brings about the confluence of concepts and tools, and that of different disciplines, to address significant problems of our time: visualization; theory and computation for complexity; macromolecular function, protein folding and misfolding; and systems integration from cells to consciousness. The scope of tools is wide-ranging, spanning imaging, crystallography, microfluidics, single-molecule spectroscopy, and synthetic probe targeting. Concepts such as dynamic self-assembly, molecular recognition, non-canonical amino acids, and others are covered in various chapters as they are cornerstones in building the trilogy description of behavior-structure, dynamics, and function.

The volume is uniquely structured to provide overviews with historical perspectives on the evolution of ideas and on the future of physical biology and biological complexity, from atoms to medicine.

Readership: Graduate students and researchers in life sciences (structural biology, genomics, systems biology, molecular biology, neuroscience), biochemistry, physical chemistry, chemical engineering, and biophysics.

"Even the shorter contributions, written by masters of their fields, are penetrating."

Chemistry World

Other Titles by the Author:

Femtochemistry: Ultrafast Dynamics of the Chemical Bond, Vol 1&2, 1994

Voyage Through Time: Walks of Life to the Nobel Prize, 2003

4D Electron Microscopy: Imaging in Space and Time, 2009



Rights Information:

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Hardcover: 584pp

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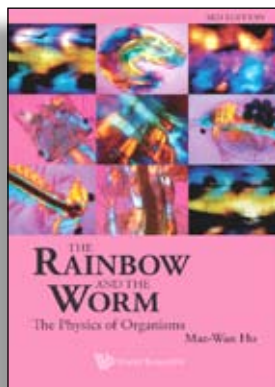
978-1-84816-199-3

US\$158 £85

Paperback: 584pp

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US\$78 £42

**Rights Information:**

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Hardcover: 408pp

Pub. date: Aug 2008

978-981-283-259-7

US\$52 £28

Paperback: 408pp

978-981-283-260-3(pbk)

US\$30 £16

THE RAINBOW AND THE WORM

The Physics of Organisms

(3rd Edition)

by **Mae-Wan Ho** (*Institute of Science in Society, UK*)

This highly unusual book began as a serious inquiry into Schrödinger's question, "What is life?", and as a celebration of life itself. It takes the reader on a voyage of discovery through many areas of contemporary physics, from non-equilibrium thermodynamics and quantum optics to liquid crystals and fractals, all necessary for illuminating the problem of life. In the process, the reader is treated to a rare and exquisite view of the organism, gaining novel insights not only into the physics, but also into "the poetry and meaning of being alive." This much-enlarged third edition includes new findings on the central role of biological water in organizing living processes; it also completes the author's novel theory of the organism and its applications in ecology, physiology and brain science.

Readership: Sixth-form and undergraduate students in physics and biology; biophysics, biochemistry and quantum mechanics undergraduates.

"... 'what is life?' Mae-Wan Ho presents an interconnected system of proposals, experimental results and conjectures which go a long way towards providing an entirely new answer to this question. It is based on research which is mainstream in its theoretical physical foundations, though innovatory in some of its techniques. This makes the book highly important, and if she is right it would be revolutionary."

Network

Reviews of the 1st Edition

"Mae-Wan Ho's book provides a very original survey of how biology may be linked to physics through the concepts of coherence and of coupled processes. Although it is deeply serious, the writing has a pleasant touch of gaiety, due, I think, to the author's sense of excitement in the central problem: What constitutes 'being alive'?"

K G Denbigh

**Professor of Physical Chemistry
Queen Elizabeth College, London**

"The layman may not understand half of this book, but he will understand more than he expects to or may feel he has any right to. The author, whether discussing 'quantum-entanglement' or 'energy-flow', 'dynamic order' or life as 'collective response to weak signals', has the gift of making the reader dream."

P N Furbank

Emeritus Professor of English, Open University

"The book is recommended to all scientists who are interested in understanding life. It shows that life is more than a complex chemical reaction and, written by an author who understands life not only through the narrow tube of our ratio, that life is worth living with loving care. The book can be easily understood, because it is written in such a way that the basic scientific terms are repeated step by step before they are used for discussing the essential questions. Fifty years after Schrödinger's "What is Life?", this book is a worthy instalment, since it intensifies the original matter of Schrödinger."

Fritz-Albert Popp

**International Institute of Biophysics
Kaiserslautern, Germany**

"... an excellent introduction to the more physically motivated approaches to understanding biological complexity. And there's not a gel in sight."

Douglas B Kell

Trends in Biomedical Sciences

"It is high time a good book was available to not only teach biologists some physics, particularly bioenergetics, but make them sit up and think a bit more deeply about it. This little volume is more readable than other drier and much weightier books on the subject. Herein lies perhaps the merit of Mae-Wan Ho's book."

Cell Biology International

"The book is an expression of Mae-Wan Ho's belief that science is 'an adventure of the free, enquiring spirit which thrives not so much on answers as [on] unanswered questions'. The book is the coming together of many highly exciting ideas of contemporary physics in what appears to be a collage — but one that draws on a range of experiment and theory, and illuminates Ho's definition of life as a 'process of being an organizing whole'."

American Scientist

"... a fascinating excursion towards and beyond the limits of physical science fifty years on from Schrödinger's classic."

David Lloyd

Binary - Computing in Microbiology

"... [the author] clearly understands the "whys" of the world at a depth and breadth which no one else approaches ... clinical medicine requires this kind of insight ..."

Walter Bortz, MD

author of *Dare to be 100*

"... a truly stimulating and beautifully written book, full of new perspectives and researchable ideas."

Ervin Laszlo

author of *The Whispering Pond*

"... a remarkably eclectic work, joyously written and a joy to read. I certainly learned a lot from it."

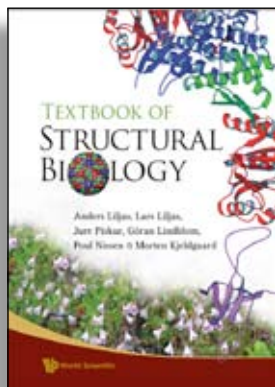
Geoffrey Sewell

author of *Quantum Physics of Collective Phenomena*

About the Author

Mae-Wan Ho, B.Sc. (First Class) and Ph.D. Biochemistry, Hong Kong University, embarked on a distinguished academic career that included Postdoctoral Fellow in Neurosciences, University of California at San Diego; Fellow of the National Genetics Foundation, USA; Senior Research Fellow, University of London; and Lecturer in Genetics and then Reader in Biology, Open University, UK. Her research evolved through biochemistry, molecular genetics and non-Darwinian evolution to the physics of organisms — a new discipline defined in the present book, first published in 1993 and the 2nd edition in 1998 — and is widely acclaimed by serious scientists and non-scientists alike. Her other books include *Bioelectrodynamics and Biocommunication* (1994), *Bioenergetics* (1995), *Genetic Engineering: Dream or Nightmare?* (1998, 1999, reprint with extended introduction in 2007), *Living with the Fluid Genome* (2003), *Energy and Information Transfer in Biological Systems* (2003), *Unravelling AIDS* (2005), *Which Energy?* (2006), *Food Futures Now, Organic, Sustainable, Fossil Fuel Free* (2008).

Mae-Wan Ho now lives in London with her husband, and is Director and co-founder of the Institute of Science in Society (www.i-sis.org.uk) and Editor of *Science in Society*.



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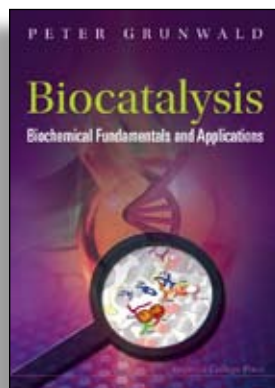
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US\$88 £66



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US\$145 £79

Paperback: 1052pp

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US\$76 £45

TEXTBOOK OF STRUCTURAL BIOLOGY

by **Anders Liljas** (Lund University, Sweden), **Lars Liljas** (Uppsala University, Sweden),
Jure Piskur (Lund University, Sweden), **Göran Lindblom** (Umeå University, Sweden),
Poul Nissen & Morten Kjeldgaard (University of Aarhus, Denmark)

This is an important textbook for undergraduate and graduate students in structural biology, chemistry, biochemistry, biology and medicine. Written by a team of leading scientists in the field, it covers all the essential aspects of proteins, nucleic acids and lipids, including the rise and fall of proteins, membranes and gradients, the structural biology of cells, and evolution — the comparative structural biology. The focus is on interesting and relevant molecular structures as well as central biology. This comprehensive volume is richly illustrated with more than 200 color figures. So far, there has been a lack of comprehensive textbooks on structural biology that are up to date; this book is written to fill the gap

Readership: Undergraduate and graduate students in structural biology, chemistry, biochemistry, biology and medicine.

"It is a marvelous book to learn or be reminded of all the structural information that I often want to know. At the same time it is a marvelous teaching book for new grad students or any kind of interested student. It replaces the now much older Branden and Tooze. There have now been quite a few similar kind of books, but this is as complete a book as I have seen, written in simple words, easy to follow with excellent illustrations."

**Michael Rossmann, Hanley Professor of Biological Sciences
Purdue University**

Other Titles by the Author(s):

Structural Aspects of Protein Synthesis, 2004

Structural Aspects of Protein Synthesis, 2nd Ed, 2010

BIOCATALYSIS

Biochemical Fundamentals and Applications

by **Peter Grunwald** (University of Hamburg, Germany)

With focus on the interdisciplinary nature of biocatalysis, the book contains many aspects of fundamental organic chemistry and some of inorganic chemistry as well, which should make it interesting not only for biochemistry but also for chemistry students. An important theme being emphasized in the book is that applied biocatalysis is one of the main prerequisites for a sustainable development.

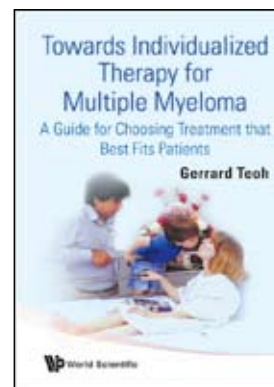
Readership: Advanced undergraduate and graduate students in biology, chemistry, biochemistry and medicine. Biochemists, biologists and chemists.

TOWARDS INDIVIDUALIZED THERAPY FOR MULTIPLE MYELOMA

A Guide for Choosing Treatment that Best Fits Patients
by **Gerrard Teoh** (Gleneagles Hospital, Singapore)

This very provocative book takes the reader on a “think-out-of-the-box” journey through the development of a treatment regimen for multiple myeloma called “dtZ”. It is a firsthand account of how more than 50 patients with myeloma were given a non-toxic, precisely-targeted, anti-cancer treatment that was specifically adapted to their individual cancers. These Individualized Anti-Cancer Targeted Therapies (smart bombs) have produced amongst the best responses as well as survival rates for myeloma. Accordingly, the author argues that some patients might even have been “cured” of their cancers.

Readership: Patients with multiple myeloma; doctors (including general practitioners), nurses, and researchers in myeloma.



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Non-English language rights available.

Paperback: 200pp

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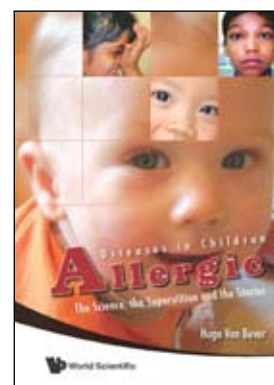
978-981-283-579-6(pbk)
US\$45 £34

ALLERGIC DISEASES IN CHILDREN

The Science, the Superstition and the Stories
by **Hugo Van Bever** (National University Hospital, Singapore)

The purpose of this book is to share information and knowledge on allergic disorders in children with everybody, especially parents. Allergies in children are a common and growing problem. From the author's experience, many parents lack correct information on allergy. This has led to wrong approaches in dealing with the problem, with some parents experimenting with all kinds of non-scientifically proven testing and treatments. Sometimes these treatments can be harmful for the child. The book comprises twelve chapters, each covering a specific aspect of allergy in children. The first part covers general issues, such as underlying mechanisms, allergens, and epidemiology of allergic diseases. In the second part, specific allergic diseases are covered. The book ends with considerations on diagnosis and treatment, and offers suggestions for future research on allergy in children.

Readership: Parents and general public, healthcare professionals and medical students.

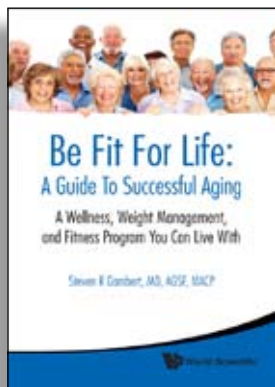


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US\$29.95 £22

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Hardcover: 1100pp (approx.)

Pub. date: Fall 2009

978-1-84816-364-5

US\$139 £104

BE FIT FOR LIFE: A GUIDE TO SUCCESSFUL AGING

A Wellness, Weight Management, and Fitness Program You Can Live With
by **Steven R Gambert** (*Johns Hopkins University School of Medicine, USA*)

Be Fit for Life: A Guide to Successful Aging is a self-help book for anyone interested in living a happier and healthier life. Aging is a life-long process and the sooner one accepts this and better prepares for the years ahead, the more successful his/her aging process will be. Dr Gambert, a noted authority in the field of aging and medicine, takes the reader on a journey that provides information and practical advice on how to best prevent an accelerated aging process, avoid disease, and recognize and treat problems early.

This book also offers practical information to help the reader choose the right diet, exercise plan and lifestyle that will help promote a more successful aging process.

Readership: General public; health professionals and therapists interested in the study of aging, wellness and health promotion.

WHEN CANCER CROSSES DISCIPLINES

A Clinician's Handbook

edited by **Monica Robotin** (*The Cancer Council NSW & University of Sydney, Australia*),
Ian Oliver (*The Cancer Council, Australia*) & **Afaf Girgis** (*University of Newcastle, Australia*)

Ever wondered if your patient's new symptoms are a manifestation of metastatic disease, treatment effects or are altogether unrelated to the cancer diagnosis; whether herbal remedies interact with cancer treatment; when to refer for genetic testing; or how to provide informed advice regarding dietary and lifestyle modifications? The book is unique in summarizing a large amount of information that is beyond conventional oncology textbooks. While cancer is treated by multidisciplinary teams of medical oncologists, hematologists, surgeons and radiation oncologists, other specialists are called upon to treat symptoms, side effects or other diseases that can occur concurrently with cancer. In addition to the physical challenges brought about by a cancer diagnosis, patients and their relatives need sensitive and skilled psychosocial support throughout the cancer journey. The book brings together specialists from a wide range of medical, surgical, psychological and supportive specialties, while keeping the focus on the interdisciplinary management of cancer.

Readership: Practicing medical, surgical and radiation oncologists; hematologists; psychologists; basic and advanced trainees; primary care practitioners; nurses; medical students; and others interested in the field of oncology.

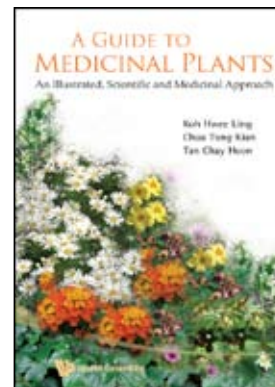
A GUIDE TO MEDICINAL PLANTS

An Illustrated, Scientific and Medicinal Approach

by **Koh Hwee Ling** (*National University of Singapore, Singapore*), **Chua Tung Kian** (*Ministry of Education, Singapore*) & **Tan Chay Hoon** (*National University of Singapore, Singapore*)

This book presents up-to-date information on a total of 75 native and non-native medicinal plants growing in Singapore. Comprehensive and useful information from the published literature — including plant descriptions and origins, traditional medicinal uses, phytoconstituents, pharmacological activities, adverse reactions, toxicities, and reported drug–herb interactions — is presented in an easy-to-read manner for easy and quick reference. There is no minimum level of knowledge required to read this book, and botanical and medical glossaries are also provided for readers' convenience.

Readership: Educators and students in complementary medicine and health, pharmacognosy, medicinal chemistry, natural products, pharmacology, toxicology, pharmacy, nursing, botany; health professionals (clinicians, pharmacists, nurses, complementary and alternative medicine practitioners); researchers; general public.



Rights Information:

Non-English language rights available.

Hardcover: 312pp

Pub. date: Feb 2009

978-981-283-709-7

US\$78 £59

WHITE BLOOD

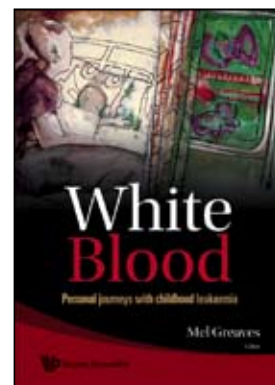
Personal Journeys with Childhood Leukaemia

edited by **Mel Greaves** (*The Institute of Cancer Research, UK*)

There are countless academic books on the subject of childhood leukemia. The idea behind this book, however, is very different. Here, we look at the extraordinary story of childhood leukemia from very distinct and unique perspectives: a distinguished physician who has lived through the transition of the disease from despair to success (and who played a key role in the latter); a distinguished laboratory scientist who has helped breach the barrenness of biological ignorance of the disease to reveal its nature; a patient who has been confronted with the tough realities of the illness and has been cured; and parents who have been given the worst possible news — that their child is diagnosed with leukemia — and who have endured the prolonged treatment, hope, and despair or relief that follows.

These individuals recount their personal experiences, challenges, and “interactions” with the disease in ways that complement and contrast with each other. Thus, not only does the book contain extraordinary stories involving the very best of biomedical research and clinical advances, but it also embodies very human tales of resilience, optimism and courage.

Readership: Paediatricians, oncologists, haematologists, cancer biologists, nurses, medical students, sociologists and historians interested in medicine and science, as well as families involved with leukemia and the general public.



Rights Information:

Non-English language rights available.

Hardcover: 220pp

Pub. date: Aug 2008

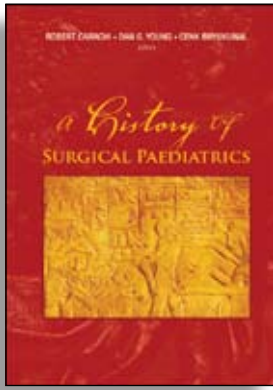
978-981-279-039-2

US\$65 £35

Paperback: 220pp

978-981-279-040-8(pbk)

US\$36 £19

**Rights Information:**

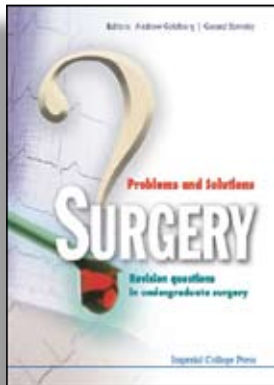
Non-English language rights available.

Hardcover: 856pp

Pub. date: May 2009

978-981-277-226-8

US\$119 £89

**Rights Information:**

Non-English language rights available.

Paperback: 368pp

Pub. date: Aug 2008

978-1-84816-187-0(pbk)

US\$45 £24

A HISTORY OF SURGICAL PAEDIATRICS

edited by **Robert Carachi**, **Dan G Young** (*University of Glasgow, UK*) & **Cenk Buyukunal** (*University of Istanbul, Turkey*)

This book provides an authoritative overview of the global development of surgical paediatrics. Biographical accounts of key people who developed this relatively new specialty, many of whom are now household names, are presented. The compendium also acknowledges the enormous contribution of imaging (ultrasound/MRI and PET scans), minimal invasive surgery, and fetal surgery, as well as the role of related journals and associations, in the progress of surgical paediatrics.

Many of the contributors have been instrumental to the development of surgical paediatrics in their respective countries, and have considerable worldwide influence on the management of children requiring surgical care. Through their valuable insight and first-hand experience, this book not only shines a light on the past achievements of previous generations of paediatric surgeons, but also serves as a model to encourage future generations to do likewise.

Readership: Surgeons, doctors, paediatricians, nurses and general public.

SURGERY: PROBLEMS AND SOLUTIONS

Revision Questions in Undergraduate Surgery

edited by **Andrew Goldberg** (*The Nuffield Orthopaedic Centre, Oxford, UK*) & **Gerard Stansby** (*Newcastle University & Freeman Hospital, Newcastle Hospitals NHS Trust, UK*)

As the first in the "Clinical Talk" series, the philosophy of this book is to have a set of question-based sections to help a final-year medical student prepare for exams. These sections include multiple choice questions (MCQs), extended matching questions (EMQs) and case studies. The idea is to have not just a "test yourself" book, but one which students can work through as a learning exercise as well as for revision purposes. For that reason, the answers and explanations provided here are just as important as the questions themselves.

Stansby and Goldberg have structured this book such that it complements one of their bestselling textbooks, *Surgical Talk: Revision in Surgery*.

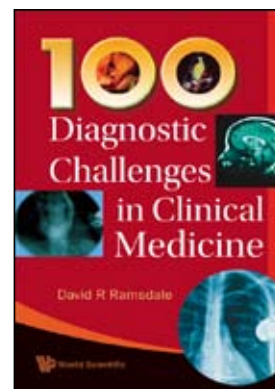
Readership: Third-, fourth- or final-year undergraduates (UK); medical students from countries with similar training to the UK, such as Singapore, Australia, South Africa, India and Pakistan.

100 DIAGNOSTIC CHALLENGES IN CLINICAL MEDICINE

by **David R Ramsdale** (*The Cardiothoracic Centre, UK*)

100 *Diagnostic Challenges in Clinical Medicine* is composed of one hundred well-illustrated clinical scenarios and their appropriate investigations. A wide variety of specialties are covered including cardiology, neurology, dermatology, endocrinology, tropical medicine, haematology, metabolic medicine, radiology, ophthalmology, venereology, and infectious diseases. Presenting the relevant investigations corresponding to each case in an interesting and easy-to-read Q&A format concerning diagnosis and management, this book serves as an ideal, and hopefully enjoyable, study aid for medical students and junior doctors who are preparing for clinical examinations in medicine. By solving the problems posed by these challenging clinical cases, the reader will gain additional practice in diagnosis and treatment strategies.

Readership: Medical students; doctors preparing for higher examinations; practicing clinicians.



Rights Information:

Non-English language rights available.

Hardcover: 256pp

Pub. date: Mar 2009

978-981-283-939-8

US\$80 £43

Paperback: 220pp

978-981-4271-74-5(pbk)

US\$54 £29

CLINICAL CASES FOR SURGERY EXAMS

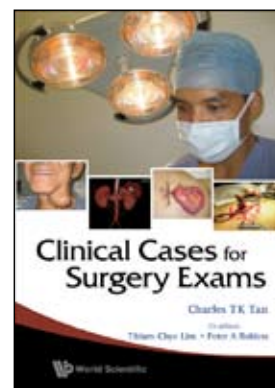
by **Charles T K Tan, Thiam-Chye Lim & Peter A Robless**

(*National University of Singapore, Singapore*)

Currently, clinical training for undergraduates is becoming more difficult. To be a good doctor with adequate training, one must be exposed to many different patients with a variety of pathologies and diseases. At present, we are unable to achieve this, mainly due to the increase in the medical student cohort each year and fewer in-patients. In short, the student-to-patient ratio is worsening, thus lessening students' contact with patients and learning experience.

Fortunately, with the objective structured clinical examination (OSCE) format, undergraduate and postgraduate teaching and examination have become more efficient. This book will be very useful for students preparing for surgical OSCEs by covering the different clinical scenarios that a certain condition might present, and allowing self-testing of the questions as well as learning from the provided answers.

Readership: Undergraduate and postgraduate medical students; trainees in surgery.



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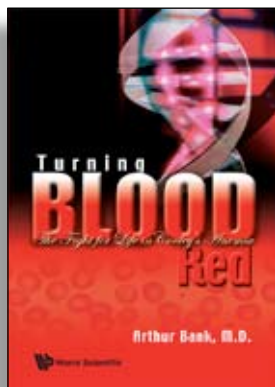
Non-English language rights available.

Hardcover: 284pp

Pub. date: Jul 2009

978-981-283-552-9(pbk)

US\$42 £32

**Rights Information:**

Non-English language rights available.

Hardcover: 288pp

Pub. date: Dec 2008

978-981-283-247-4

US\$39.95 £22

TURNING BLOOD RED

The Fight for Life in Cooley's Anemia

by **Arthur Bank** (Columbia University, USA)

This book is the story of an inherited blood disease — Cooley's anemia or beta thalassemia. Cooley's anemia is a severe and potentially fatal anemia that affects millions of people worldwide. Written by a world-recognized expert on the disease who has contributed greatly to the scientific understanding of the pathophysiology of this human hemoglobin disorder, the book describes the emotional and medical impact of the disease on patients and their families. It also summarizes the research on the disease at the level of the genes, DNA, RNA, and proteins. In addition, it also includes chapters on current therapy and future approaches to the disease, such as gene therapy, stem cell transplantation, and antenatal diagnosis.

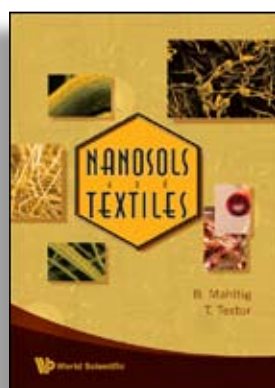
Readership: Hematologists, molecular biologists, clinical researchers, students and medical personnel at all levels interested in science and medicine.

"...Turning blood red is a workmanlike account of a physician's commitment to a disease and particularly to the patients and their families who endure it. Bank does understand that patients with thalassemia and their families are among the real heroes of the molecular biology revolution in medicine. We owe them our profound allegiance, and this book makes that case."

The Journal of Clinical Investigation

NANOSOLS AND TEXTILES

by **B Mahtig** (GMBU, Germany) & **T Textor** (DTNW, Germany)

**Rights Information:**

Non-English language rights available.

Hardcover: 236pp

Pub. date: Oct 2008

978-981-283-350-1

US\$68 £37

The book provides a short introduction to the sol-gel process, principles in modification of the sols and technical details of the application on textiles, covering in particular the chemical content of the topic. New properties of textiles gained from nanosols are summarized and explained in a broad range, focusing on the mechanical and thermal stability, repellent properties, optical properties, antistatic coatings and bioactive coatings. An active discussion is held on the bioactive modifications, because this wide and interesting field offers a high potential for many new applications, e.g. in medicine. Besides basic research, this book will also provide examples on the transition of academic research to customer products.

Readership: Materials scientists, chemists, and textile engineers from academia and industry; biologists and other people working on the development of medical devices.

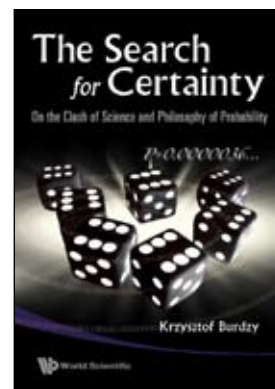
THE SEARCH FOR CERTAINTY

On the Clash of Science and Philosophy of Probability

by **Krzysztof Burdzy** (*University of Washington, USA*)

The book is non-partisan on the scientific side — it is supportive of both frequency statistics and Bayesian statistics. On the other hand, it contains well-documented and thoroughly-explained criticisms of the frequency and subjective philosophies of probability. Short reviews of other philosophical theories of probability and basic mathematical methods of probability and statistics are incorporated. The book includes substantial chapters on decision theory and teaching probability, and it is easily accessible to the general audience.

Readership: Statisticians, probabilists, philosophers, scientists, students and general public.



Rights Information:

Non-English language rights available.

Hardcover: 272pp

Pub. date: Apr 2009

978-981-4273-70-1

US\$52 £39

Rights Information:

Non-English language rights available.

Hardcover: 300pp (approx.)

Pub. date: Winter 2009

978-981-4287-13-5

US\$85 £64

DIAMOND

A Paradox Logic

(2nd Edition)

by **N S Hellerstein** (*City College of San Francisco, USA*)

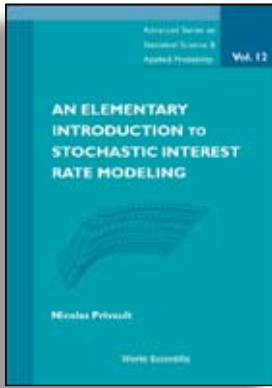
This book is about “diamond”, a logic of paradox. In diamond, a statement can be true yet false; an “imaginary” state, midway between being and non-being. Diamond’s imaginary values solve many logical paradoxes unsolvable in two-valued boolean logic. In this volume, paradoxes by Russell, Cantor, Berry and Zeno are all resolved. This book has three sections: Paradox Logic, which covers the classic paradoxes of mathematical logic, shows how they can be resolved in this new system; The Second Paradox, which relates diamond to Boolean logic and the Spencer-Brown “modulator”; and Metamathematical Dilemma, which relates diamond to Gödelian meta-mathematics and dilemma games.

Readership: Mathematicians and computer scientists.

Review of the First Edition

“This book should be interesting for everyone, and especially for logicians.”

Mathematical Reviews



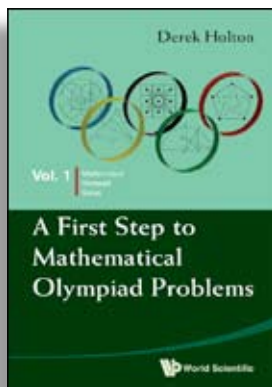
Rights Information:
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Hardcover: 192pp

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US\$48 £26



Rights Information:
Non-English language
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Paperback: 300pp (approx.)

Pub. date: Fall 2009

978-981-4273-87-9(pbk)

US\$35 £26

AN ELEMENTARY INTRODUCTION TO STOCHASTIC INTEREST RATE MODELING

by **Nicolas Privault** (*City University of Hong Kong, Hong Kong*)

This textbook is written as an accessible introduction to interest rate modeling and related derivatives, which have become increasingly important subjects of interest in financial mathematics. The models considered range from standard short rate to forward rate models and include more advanced topics such as the BGM model and an approach to its calibration. An elementary treatment of the pricing of caps and swaptions under forward measures is also provided, with a focus on explicit calculations and a step-by-step introduction of concepts. Each chapter is accompanied with exercises and their complete solutions, making this book suitable for advanced undergraduate or beginning graduate-level students.

Readership: Advanced undergraduates and graduate students in finance and actuarial science; practitioners involved in the quantitative analysis of interest rate models.

A FIRST STEP TO MATHEMATICAL OLYMPIAD PROBLEMS

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

The International Mathematical Olympiad (IMO) is an annual international mathematics competition held for pre-collegiate students. It is also the oldest of the international science olympiads, and competition for places is particularly fierce. This book is an amalgamation of the first 8 of 15 booklets originally produced to guide students intending to contend for placement on their country's IMO team.

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

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

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

A MATHEMATICAL BRIDGE

An Intuitive Journey in Higher Mathematics
(Second Edition)

by **Stephen Hewson**

Although higher mathematics is beautiful, natural and interconnected, to the uninitiated it can feel like an arbitrary mass of disconnected technical definitions, symbols, theorems and methods. An intellectual gulf needs to be crossed before a true, deep appreciation of mathematics can develop. This book bridges this mathematical gap. It focuses on the process of discovery as much as the content, leading the reader to a clear, intuitive understanding of how and why mathematics exists in the way it does.

The narrative does not evolve along traditional subject lines: each topic develops from its simplest, intuitive starting point; complexity develops naturally via questions and extensions. Throughout, the book includes levels of explanation, discussion and passion rarely seen in traditional textbooks. The choice of material is similarly rich, ranging from number theory and the nature of mathematical thought to quantum mechanics and the history of mathematics. It rounds off with a selection of thought-provoking and stimulating exercises for the reader.

Readership: Mathematics students and teachers.

Reviews of the First Edition

"This nicely written book invites the reader to an interesting journey into the challenging, difficult, but exciting world of undergraduate mathematics ... It has a wide selection of exercises for each chapter, suggestions for further reading, and appendices with useful background material. Reading this passionately written text shall be very helpful for those who mistakenly believe that higher mathematics is a dull and hard-to-understand subject."

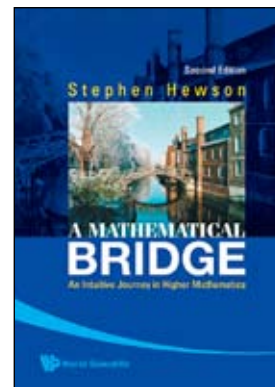
Zentralblatt MATH

"As a teacher of undergraduate mathematics, I found this book to be a valuable resource ... The material is presented in an uncluttered clear style that will enable undergraduates to use the book for reinforcement and/or alternative viewpoints on the mathematics they are learning. The exercises for the reader are about at the right level for an undergraduate, and the mathematics covered is not just pure mathematics but essential topics in mathematical physics and probability theory."

Mathematical Reviews

"This book is written in a way that is suitable not only for the student looking forward and the graduate in reflective mode, but also for schoolteachers seeking material on which to base their accounts of mathematics ... The book concludes with a substantial body of exercises that aims to reinforce and extend the material."

Times Higher Education



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Hardcover: 672pp

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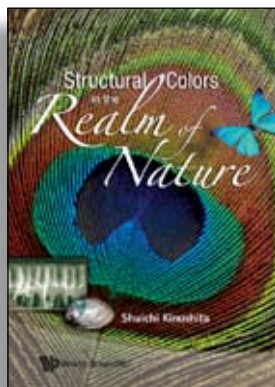
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Hardcover: 368pp

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978-981-270-783-3

US\$95 £51

Rights Information:

Non-English language rights available.

Hardcover: 300pp (approx.)

Pub. date: Fall 2009

978-981-4277-92-1

US\$68 £51

STRUCTURAL COLORS IN THE REALM OF NATURE

by **Shuichi Kinoshita** (*Osaka University, Japan*)

Coloring in nature comes mostly from inherent colors of materials, though it sometimes has a purely physical origin such as diffraction or interference of light. The latter, called structural color or iridescence, has long been a problem of scientific interest. Recently, structural colors have attracted great interest because various photonic architectures, now developing in modern technologies, have been spontaneously created in the self-organization process and have been extensively used as one of the important visual functions. In this book, the fundamental optical properties underlying structural colors are explained, and these mysteries of nature are surveyed from the viewpoint of biological diversity and according to their sophisticated structures. The book proposes a general principle of structural colors based on the structural hierarchy and presents up-to-date applications.

Readership: Academics and undergraduates/graduates in the physics, biology, optical engineering, and photonics fields; industry players involved in the automobile, cosmetics, painting, ink, display, rendering, and fiber industries.

"The writing is clear, sophisticated and professional, but at the same time personal and accessible ... this book really is comprehensive, presenting basic background information, detailed descriptions of the systems and of the techniques used to study them, and challenges and opportunities for future directions of research and study."

Helen Ghiradella

Professor of Biological Sciences

PhD, University of California, Santa Barbara

NANOSCIENCE AND NANOTECHNOLOGY IN ENGINEERING

by **Vijay K Varadan** (*University of Arkansas, USA*), **A Sivathanu Pillai**, **Debashish Mukherji**, **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 the above two fields of 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.

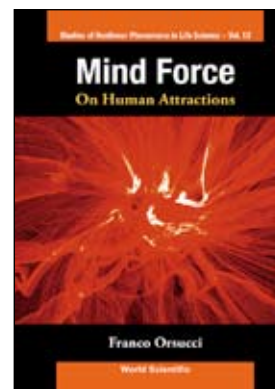
MIND FORCE

On Human Attractions

by **Franco Orsucci** (*University College London, UK & University of Siena & Institute for Complexity Studies, Italy*)

Connections between genes and molecules, neurons and hormones, thinking and language, people and organizations create a continuous flow of synchronized interactions. These intermingled interactions form dynamical networks across many scales, from molecular, to biological, to cognitive and social. In a sequence of cycles, the reader is guided in this heterogeneous hypernetwork to discover the fields and landscapes of Mind Force. Mind, brain, body and society emerge from the same stream through the complexity of nature: the energy of Mind Force and human attractions.

Readership: Undergraduates, graduate students, researchers in complexity and cognitive neuroscience; humanities scholars; and interested general public.



Rights Information:

Non-English language rights available.

Hardcover: 164pp

Pub. date: May 2009

978-981-277-121-6

US\$68 £51

HOW PHYSICS CONFRONTS REALITY

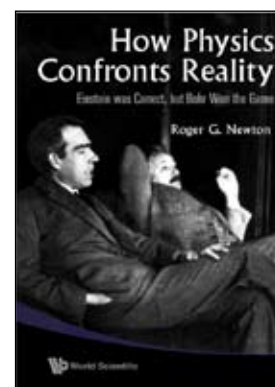
Einstein was Correct, but Bohr Won the Game

by **Roger G Newton** (*Indiana University, USA*)

This book recalls, for nonscientific readers, the history of quantum mechanics, the main points of its interpretation, and Einstein's objections to it, together with the responses engendered by his arguments. Most popular discussions on the strange aspects of quantum mechanics ignore the fundamental fact that Einstein was correct in his insistence that the theory does not directly describe reality. While that fact does not remove the theory's counterintuitive features, it casts them in a different light.

Context is provided by following the history of two central aspects of physics: the elucidation of the basic structure of the world made up of particles, and the explanation, as well as the prediction, of how objects move. This history, prior to quantum mechanics, reveals that whereas theories and discoveries concerning the *structure* of nature became increasingly realistic, the laws of motion, even as they became more powerful, became more and more abstract and remote from intuitive notions of reality. Newton's laws of motion gained their abstract power by sacrificing direct and intuitive contact with real experience. Arriving 250 years after Newton, the break with a direct description of reality embodied in quantum mechanics was nevertheless profound.

Readership: Academics and students in physics and the general public.



Rights Information:

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Hardcover: 250pp (approx.)

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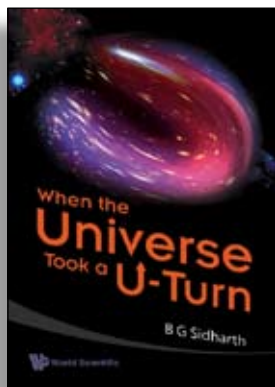
978-981-4277-02-0

US\$54 £41

Paperback: 250pp (approx.)

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US\$29.95 £22

**Rights Information:**

Non-English language rights available.

Hardcover: 230pp (approx.)

Pub. date: Fall 2009

978-981-4277-81-5

US\$58 £44

**Rights Information:**

Non-English language rights available.

Hardcover: 150pp (approx.)

Pub. date: Winter 2009

978-981-4280-58-7

US\$38 £29

WHEN THE UNIVERSE TOOK A U-TURN

by **B G Sidharth** (*B M Birla Science Centre, Hyderabad, India*)

For the past 25 years, String Theory, popularly called the “Theory of Everything”, has mesmerized not just scientists, but also the general public. Yet a closer scrutiny today reveals that it is no more than a mathematical marvel. It has neither predicted anything nor has it been anywhere near verification. We are essentially where we were in the early seventies.

Another chronic problem that Einstein had abandoned was the unified description of his theory of General Relativity that deals with the Universe at large and Electromagnetism which is to do with particles. Such a description is necessary even if it warrants a radical departure from our time-honoured ideas of space and time. A bright spot has now appeared in Cosmology. Iconoclastic observations in the past years have shown that the Universe is actually accelerating, driven by a mysterious Dark Energy. This book takes the lay reader through these uncharted waters and mind-boggling developments on an unimaginable journey from the ultra small to the farthest stretches conceivable, via such imagination defying concepts as extra dimensions and multiple universes.

Readership: Students and academics interested in theoretical physics and history of science.

DID TIME BEGIN? WILL TIME END?

Maybe the Big Bang Never Occurred

by **Paul H Frampton** (*University of North Carolina, USA*)

Although everyone is familiar with the concept of time in everyday life and has probably given thought to the question of how time began, recent scientific developments in this field have not been accessible in a simple understandable form. This book is important as it presents to readers current ideas about the role of time in theoretical cosmology.

Recent observational discoveries, especially that the expansion rate of the universe is accelerating, have revolutionized the understanding of the energy content of the universe. This development leads to new possibilities for the beginning and end of cosmological time. This book emphasizes the notion of entropy and describes how it is theoretically possible that the universe may end in a finite time or that time can cycle and never end.

Provided here is twenty-first century scientific knowledge, written by one of the world’s most eminent theoretical physicists, that will better enable the public to discuss further the fascinating idea of time. It is ideally suited also for young people considering a career in scientific research.

Readership: Professional non-scientists to high school students considering a career in science.

CREMONA VIOLINS

A Physicist's Quest for the Secrets of Stradivari

by **Kameshwar C Wali** (*Syracuse University, USA*)

This book contains a brief account of the history of Cremona violins — the rise and fall of the art that dominated over two centuries — and is primarily devoted to the physics behind the violin acoustics, specifically the research of William F “Jack” Fry over the past four decades and more. It chronicles his early research and the evolution of his ideas leading to a holistic approach to its acoustics, in sharp contrast to the conventional “reductionist” approach. With rare insights, he has come closer than anyone before in reproducing the sound of the great Italian masters. This historic achievement makes the book extremely valuable for violin makers, violin researchers, and young and aspiring violinists who would like to own excellent-sounding instruments with all the desirable characteristics of old instruments at affordable prices.

Readership: Physicists, musicologists, violin makers and violin researchers.

Other Title by the Author:

S Chandrasekhar: The Man Behind the Legend, 1997

THE INTELLIGIBLE UNIVERSE

An Overview of the Last Thirteen Billion Years

(2nd Edition)

by **Julio A Gonzalo** (*Universidad Autónoma de Madrid, Spain*)

This interesting book reviews WMAP's main results (2003) and discusses in detail how the accurate qualitative results for the “age” of the universe and the Hubble constant were anticipated in an article published five years before in *Acta Cosmologica*, Krakow. In the final chapter on “Cosmic Numbers”, it is shown that, as a result of the coincidence at decoupling time between atom formation and matter/radiation equality, a reasonable cosmic justification for the mass ratio of protons and electrons is obtained.

Readership: Physicists, astrophysicists and historians of science; general readers with a good scientific background.

Rights Information:
Non-English language
rights available.

Hardcover: 200pp (approx.)

Pub. date: Fall 2009

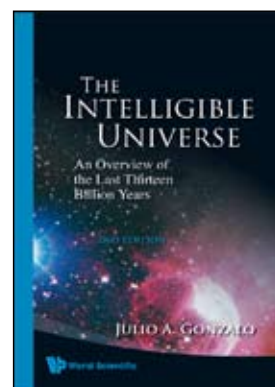
978-981-279-109-2

US\$49 £27

Paperback: 200pp (approx.)

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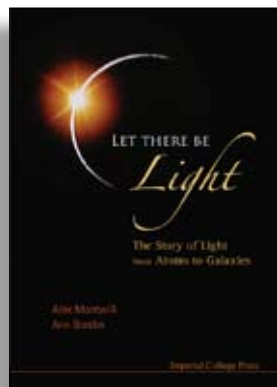
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US\$42 £23

LET THERE BE LIGHT

The Story of Light from Atoms to Galaxies

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

This book is the first of its kind to devote itself at this level to the key role played by light and electromagnetic radiation in the universe. Readers are introduced to philosophical hypotheses such as the economy, symmetry, and universality of natural laws, and are then guided to practical consequences such as the rules of geometrical optics and even Einstein's well-known but mysterious relationship, $E = mc^2$. Most chapters feature a pen picture of the life and character of a relevant scientific figure. These "Historical Interludes" include, among others, Galileo's conflicts with the Inquisition, Fourier's taunting of the guillotine, Neils Bohr and World War II, and the unique character of Richard Feynman.

Going one step beyond the popular level, this easy-to-read book gives an overall view to undergraduate and postgraduate physics students that is often missing when trying to assimilate the technical details of their courses. Through its original treatment of topics and enjoyable style of writing, it will also stimulate keen interest in general readers who are interested in science and have a basic mathematics background as well as teachers looking for basic and accurate background information.

Readership: Science students at undergraduate university level, lecturers of undergraduate and pre-university courses, graduates in physics and related sciences, and general readers.

"I found it wonderful: interesting and amusing ... I appreciated the easy but accurate way the arguments are presented, the very nice figures and drawings, the historical interludes with 'gossips' scarcely known, etc. The choice of the arguments is also interesting."

Professor Giorgio Romano
Università INFN, Salerno

"It is a unique type of book — informative, witty, cultured and erudite ... I loved the observation effect of multiple polaroids — mind blowingly fascinating stuff which can be appreciated by all ... approaching optics via Fermat and the lifeguard also keeps the fascination level up while the historical interludes keep our feet on the ground by humanising the tale."

Professor Colin Latimer
The Queens University Belfast, Northern Ireland

"The combined effort has given us this wonderful survey of how light comes into physics and how it is even today impossible to really understand."

Sveinn Bjarman
Uppsala University, Sweden

"It is a very beautiful book. I like its plenitude of diagrams and cartoons, and its historical and biographical interludes ... it seems admirably suitable as background material for bright young students of Science/Physics."

Professor Frank Imbusch
National University of Ireland, Galway

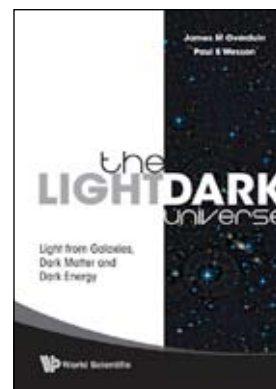
THE LIGHT/DARK UNIVERSE

Light from Galaxies, Dark Matter and Dark Energy

by **James M Overduin** (Stanford University, USA) & **Paul S Wesson** (University of Waterloo, Canada)

To the eyes of the average person and the trained scientist, the night sky is dark, even though the universe is populated by myriads of bright galaxies. *Why* this happens is a question commonly called Olbers' Paradox, and dates from at least 1823. *How* dark is the night sky is a question which preoccupies astrophysicists at the present. The answer to both questions tells us about the origin of the universe and the nature of its contents — luminous galaxies like the Milky Way, plus the dark matter between them and the mysterious dark energy which appears to be pushing everything apart. In this book, the fascinating history of Olbers' Paradox is reviewed, and the intricate physics of the light/dark universe is examined in detail. The fact that the night sky is dark (a basic astronomical observation that anybody can make) turns out to be connected with the finite age of the universe, thereby confirming some event like the Big Bang. But the space between the galaxies is not perfectly black, and data on its murkiness at various wavelengths can be used to constrain and identify its unseen constituents.

Readership: Informed readers interested in astronomy.



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Hardcover: 236pp

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US\$55 £30

Paperback: 236pp

978-981-283-589-5(pbk)

US\$35 £19

A PARADIGM CALLED MAGNETISM

by Sushanta Dattagupta (Indian Institute of Science Education & Research, Kolkata, India)

This book provides an overview of how diverse issues of Magnetism have implications for other areas of physics. Attention will be drawn to different aspects of many-body physics, which first appeared in Magnetism but have had deep impact in different branches of physics. Each of these aspects will be illustrated schematically and in terms of physical examples, chosen from multicritical phenomena, quantum phase transition, spin glasses, relaxation, phase ordering and quantum dissipation. A unique feature of this book is a unified and coherent discussion of magnetic phenomena, presented in a lucid and pedagogical manner.

Readership: Graduate and postgraduate students and researchers in condensed matter physics; practitioners in experimental and theoretical aspects of magnetism.



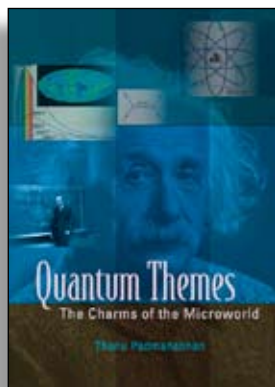
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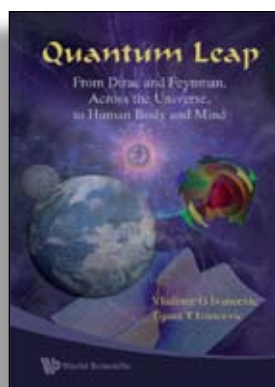
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Rights Information:
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Hardcover: 856pp

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US\$148 £80

QUANTUM THEMES

The Charms of the Microworld

by **Thanu Padmanabhan** (*The Inter-University Centre for Astronomy and Astrophysics, Pune, India*)

Quantum theory is one of the more abstract branches of theoretical physics, yet it makes clear and concrete predictions which are repeatedly verified experimentally. More recently, there has been some confluence between the concepts of microphysics and those of macrophysics. Currently fashionable ideas in cosmology are also deeply linked to concepts from quantum theory, thus piquing greater interest in this subject. This timely book takes stock of what quantum theory has achieved and where it is leading to at present, in a manner understandable to an educated layman.

Readership: This is intended to be a popular science book at the level of the articles which appear in *New Scientist* or *Scientific American*.

QUANTUM LEAP

From Dirac and Feynman, Across the Universe, to Human Body and Mind

by **Vladimir G Ivancevic** (*Defence Science & Technology Organisation, Australia*) & **Tijana T Ivancevic** (*University of South Australia, Australia*)

This book starts with both non-mathematical and mathematical preliminaries. It presents the basics of both non-relativistic and relativistic quantum mechanics, and introduces Feynman path integrals and their application to quantum fields and string theory, as well as some non-quantum applications. It then describes the quantum universe in the form of loop quantum gravity and quantum cosmology. Lastly, the book turns to the human body and mind, applying quantum theory to electro-muscular stimulation and consciousness.

Readership: Physicists, mathematicians, engineers, chemists, biologists, psychologists — both in academia and industry.

INVENTION OF INTEGRATED CIRCUITS

Untold Important Facts

by **Arjun N Saxena** (Emeritus Professor & Patron, Rensselaer, USA)

This book is the first to give an authoritative and comprehensive account of the invention of Integrated Circuits (ICs) from an insider who had participated and contributed from the beginning of their invention and advancement to the Ultra Large Scale ICs (ULSICs) of today. It reads like a mystery novel to engross the reader, but it is not based on fiction; it gives documented facts of the invention of ICs, analyzes the patents, and highlights additional details and clarifications of their history.

In addition, the book clarifies the Nobel Prize award and raises intriguing questions which as yet remain unanswered even after about half a century since the ICs were invented. This is the invention which has revolutionized the whole world forever!

Readership: Technology researchers, developers, managers, patent lawyers, academics, undergraduate and advanced graduate students in semiconductors, electrical and electronic engineering, microelectronics and materials engineering; curious pedestrians on the invention history of gadgets carried by the pedestrian's body.

"Professor Arjun Saxena has written a most comprehensive treatise on probably the most revolutionary invention of the 20th Century. It gives all the details of the relevant patents and the cast of characters involved. There were certainly many who contributed to this effort over the years, as Arjun has well documented in great detail."

Julius Blank

Co-founder of Fairchild Semiconductor Corporation

"With the sharp eye of a detective, Professor Saxena has the proper perspective to understand who did what. The major value and credibility of his account is the fact that he was there when the invention was made, working in the field of semiconductors, and clearly understanding what was known and what was not at that time. Only his desire to discover the truth and his personal passion for such pursuit could justify the energy that Professor Saxena has spent in collecting and analyzing the voluminous information necessary to bring to the attention of the readers the detailed and intimate story of the invention of the integrated circuit."

Federico Faggin, Chairman Emeritus, Synaptics, Inc.
Co-inventor of the microprocessor

"The invention of the transistor led to the invention of the integrated circuit some fifty years ago. Those inventions made it possible to develop the personal computer which led to the industrial revolution of the 20th century or as better known, the digital revolution. There are numerous articles and books which describe and discuss the above events. However, none of them discusses in detail, the events which led to the invention of the IC the way that Professor Arjun Saxena has done in this book. Arjun in his book revealed many historic facts unknown to the general public or even most of the experts in the field. For those of us who would like to better understand the events which have led to a change in every day life and created new prosperity in North America, Europe and Asia, this book is a must."

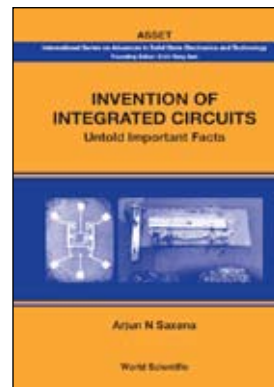
Dan Maydan, President (Retired) of Applied Materials

"Professor Saxena's book makes a good case for a course on patents, or more broadly, intellectual property. It contains the beginnings of relevant case studies. In these days when so much of our technological advances occur in small newer companies, it would be very valuable to them to understand this end of their business."

Bob Norman, Formerly Director of Research, Fairchild Space & Defense Systems
Cofounder, General Microelectronics & Founder, Nortec Electronics

"This book is the first and only in the literature to give a technically authoritative and historically in-depth, document-patent-based, correct account of the invention of the silicon monolithic integrated circuit, because the invention has been attributed to two inventors, each from a combating manufacturer in rivalry, with the eventual compromise stipulations ruled by the judge in a settlement reached in court, compounded subsequently by popularity recognition of the U.S. Presidential National Technology Award in Engineering and also the World's Nobel Prize in Applied Physics, all of which further confused the facts underlying the invention of the integrated circuits. It is hoped that this monograph puts an end to the stipulations and the reader-attracting tales about the IC invention history and its two rivals and colorful personal-life inventors."

Foreword by Chih-Tang Sah (Tom Sah)
The Founding editor of this ASSET series



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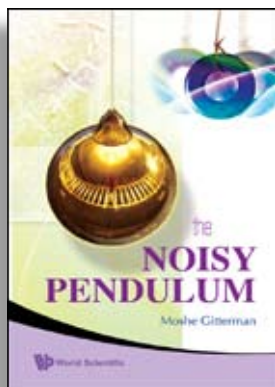
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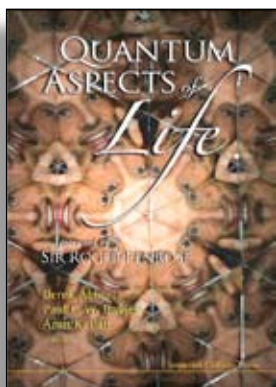
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US\$98 £53

Paperback: 468pp

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US\$55 £30

THE NOISY PENDULUM

by **Moshe Gitterman** (*Bar-Ilan University, Israel*)

This book contains the general description of the mathematical pendulum subject to constant torque, periodic and random forces. The latter appear in additive and multiplicative form with their possible correlation. For the underdamped pendulum driven by periodic forces, a new phenomenon — deterministic chaos — comes into play, and the common action of this chaos and the influence of noise are taken into account. The inverted position of the pendulum can be stabilized either by periodic or random oscillations of the suspension axis or by inserting a spring into a rigid rod, or by their combination. The pendulum is one of the simplest nonlinear models, which has many applications in physics, chemistry, biology, medicine, communications, economics and sociology. A wide group of researchers working in these fields, along with students and teachers, will benefit from this book.

Readership: Undergraduate and graduate students, researchers and academics who are interested in classical mechanics and theoretical physics.

QUANTUM ASPECTS OF LIFE

edited by **Derek Abbott** (*University of Adelaide, Australia*), **Paul C W Davies** (*Arizona State University, USA*) & **Arun K Pati** (*Institute of Physics, Orissa, India*)

foreword by **Sir Roger Penrose**

This book presents the hotly debated question of whether quantum mechanics plays a non-trivial role in biology. In a timely way, it sets out a distinct quantum biology agenda. The burgeoning fields of nanotechnology, biotechnology, quantum technology, and quantum information processing are now strongly converging. The acronym BINS, for Bio-Info-Nano-Systems, has been coined to describe the synergetic interface of these several disciplines. The living cell is an information replicating and processing system that is replete with naturally-evolved nanomachines, which at some level require a quantum mechanical description. As quantum engineering and nanotechnology meet, increasing use will be made of biological structures, or hybrids of biological and fabricated systems, for producing novel devices for information storage and processing and other tasks. An understanding of these systems at a quantum mechanical level will be indispensable.

Readership: Graduate students and researchers in quantum physics, biophysics, nanosciences, quantum chemistry, mathematical biology and complexity theory, as well as philosophers of science.

THE INVERTED BOWL

Introductory Accounts of the Universe and Its Life

by **George H A Cole** (*University of Hull, UK*)

The present well-established study of planets orbiting stars other than our Sun, the exoplanets, was reviewed by the author in his earlier book *Wandering Stars*. This new and exciting field of study has expanded quickly, particularly due to technological advances in both Earth-based telescopes and, more recently, in the application of automatic space vehicles. Well over 300 exoplanets have now been catalogued, each of mass comparable to or greater than those of the major planets of the Solar System. Earth-sized bodies remain out of reach for the present. The data obtained so far show that the distribution of major planets in our Solar System is the exception rather than the rule, contrary to earlier expectations. A few exoplanet systems do, nevertheless, give the promise of broadly Solar System conditions with the possibility of Earth-like components in appropriate orbits.

This immediately raises the age-old question of whether there can be life elsewhere in the Universe and whether this might involve advanced technologically-capable beings like ourselves. The topic is explored in this workbook. To gain a balanced perspective on these matters, the arguments are set against the broad panorama of the Universe on the one hand and on the evolution of life on Earth leading to *Homo sapiens* on the other. More than this, the apparatus for achieving technological excellence, such as the development of appropriate energy sources and the invention of the required mathematical skills, is also included. This wide range of arguments is unusual.

This notebook-cum-workbook provides a firm and comprehensive introduction to these studies. It is written by an expert in the field for readers beginning to ponder these questions seriously. It is hoped that the reader will extend the arguments further as the subject develops. A special feature is an extensive compendium to act as the beginnings of a personal inventory. The *Inverted Bowl* is in a very real sense a companion to *Wandering Stars*.

Readership: Undergraduates and lecturers in astrophysics, astronomy and geophysics, as well as lay people.

Other Title by the Author:

Wandering Stars – About Planets and Exo-Planets: An Introductory Notebook, 2006

Rights Information:

Non-English language rights available.

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Pub. date: Winter 2009

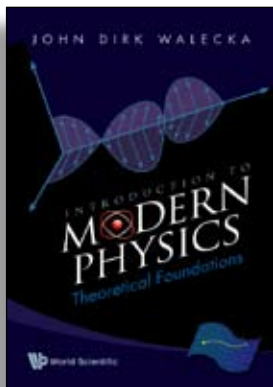
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US\$88 £47

Paperback: 496pp

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US\$65 £35

INTRODUCTION TO 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, presents the foundations and frontiers of today’s physics. It focuses on the following topics: quantum mechanics; applications in atomic, nuclear, particle, and condensed-matter physics; special relativity; relativistic quantum mechanics, including the Dirac equation and Feynman diagrams; quantum fields; and general relativity. The aim is to cover these topics in sufficient depth such that things “make sense” to students and they can achieve an elementary working knowledge of them. Many problems are included, a great number of which take dedicated readers just as far as they want to go in modern physics. Although the book is designed so that one can, in principle, read and follow the text without doing any of the problems, the reader is urged to attempt as many of them as possible. Several appendices help bring the reader up to speed on any additional required mathematics. With very few exceptions, the reader should then find the text, together with the appendices and problems, to be self-contained.

Readership: Upper-level undergraduate physics or science students, research scientists and engineers.

“The author is obviously well versed in both teaching and writing about the topics covered, and the presentation is mostly clear and concise ... the text is complemented and expanded by numerous well-chosen exercises.”

Physics Today

About the Author

Professor Walecka is Governor’s Distinguished CEBAF Professor of Physics, Professor Emeritus at Stanford University and Professor of Physics at the College of William and Mary. He was the Scientific Director of the Continuous Electron Beam Accelerator Facility (CEBAF) in its initial stage (from 1986 to 1992). He was awarded the Bonner Prize for Nuclear Physics by the American Physical Society and was a Distinguished Schiff Lecturer and Primakoff Lecturer. For his many contributions to research, administration, and teaching, he was awarded the Virginia Lifetime Achievement in Science.

Other Titles by the Author:

Fundamentals of Statistical Mechanics: Manuscript and Notes of Felix Bloch, 2000

Theoretical Nuclear and Subnuclear Physics, 2nd Ed, 2004

Introduction to General Relativity, 2007

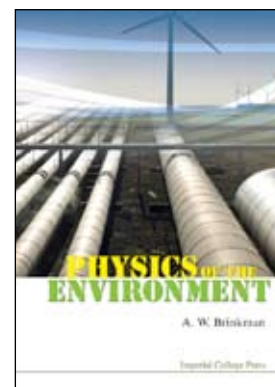
Theoretical Foundations of Modern Physics, II, 2010

PHYSICS OF THE ENVIRONMENT

by **A W Brinkman** (*Durham University, UK*)

Most books on environmental science focus on ecological or biological aspects of environmental conservation, often with a polemic agenda. The physics, if covered at all, is generally superficial. Using pertinent examples from the environment and the ways in which people interact with it, *Physics of the Environment* sets out to provide a cogent account of the underlying physical laws with a lucidity and rigor appropriate to an undergraduate course in the subject. Students will gain an understanding of the physical concepts that govern the world as well as an appreciation of the technologies of power generation and transport, and the impact these have on the environment.

Readership: Academics and undergraduate (2nd or subsequent year) students in physics; suitable as an introductory text for higher-degree students in the subject with no previous exposure to environmental physics.



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PRACTICAL GUIDE TO COMPUTER SIMULATIONS

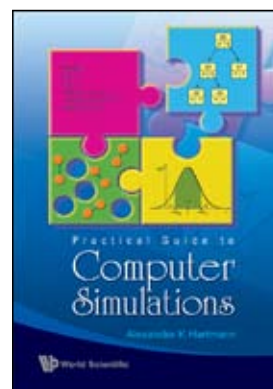
(With CD-ROM)



by **Alexander K Hartmann** (*University of Oldenburg, Germany*)

This book presents all the computational techniques and tools needed to start doing scientific research using computer simulations. After working through this book, the reader will possess the necessary basic background knowledge, from program design, programming in C, fundamental algorithms and data structures, random numbers, and debugging, all the way to data analysis, presentation and publishing. In each of these fields, no preliminary knowledge is assumed. The reader will be equipped to successfully perform complete projects from the first idea until the final publication. All techniques are explained using many examples in C; these C codes, as well as the solutions to exercises, are readily available in the accompanying CD-ROM. There has been no similar comprehensive book written so far. Currently, one needs many different books to learn all the necessary elements. With this book, however, one basically needs only a second book on field-specific algorithms in order to be fully equipped to perform computer simulations research.

Readership: Advanced undergraduate and graduate students in biology, chemistry, computer science, engineering and physics. Also for experienced researchers in these fields who start with computer simulations.



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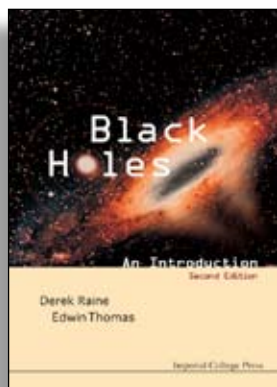
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US\$28 £21

BLACK HOLES

An Introduction

(2nd Edition)

by **Derek Raine & Edwin Thomas** (*University of Leicester, UK*)

This introduction to the fascinating subject of black holes fills a significant gap in the literature which exists between popular, non-mathematical expositions and advanced textbooks at the research level. It is designed for advanced undergraduates and first year postgraduates as a useful stepping-stone to the advanced literature.

The book provides an accessible introduction to the exact solutions of Einstein's vacuum field equations describing spherical and axisymmetric (rotating) black holes. The geometry and physical properties of these spacetimes are explored through the motion of particles and light. The use of different coordinate systems, maximal extensions and Penrose diagrams is explained. The association of the surface area of a black hole with its entropy is discussed and it is shown that with the introduction of quantum mechanics black holes cease to be black and can radiate. This result allows black holes to satisfy the laws of thermodynamics and thus be consistent with the rest of physics.

In this new edition the problems in each chapter have been revised and solutions are provided. The text has been expanded to include new material on wormholes and clarify various other issues.

Readership: Lecturers, advanced undergraduates and postgraduates in physics, astronomy and mathematics.

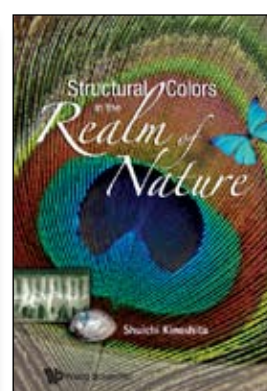
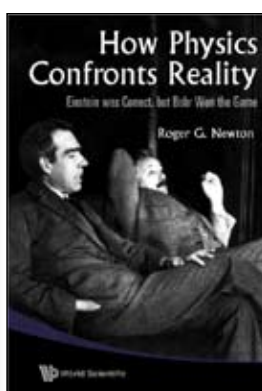
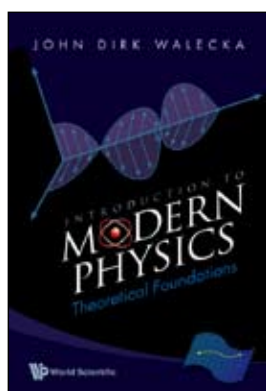
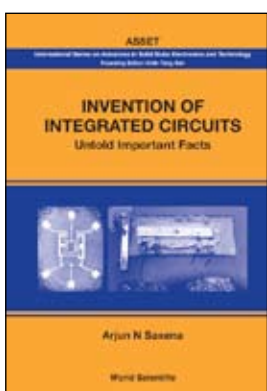
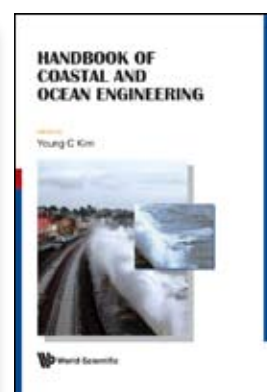
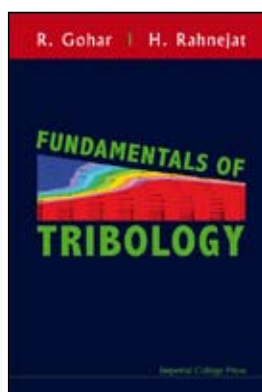
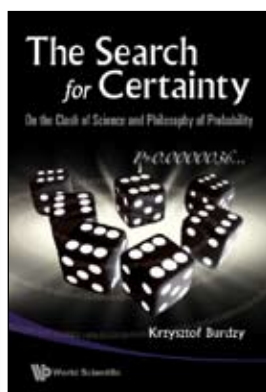
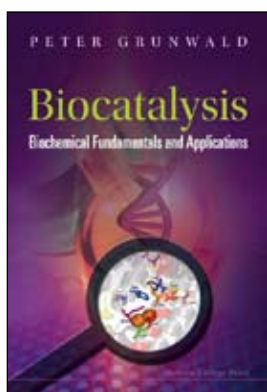
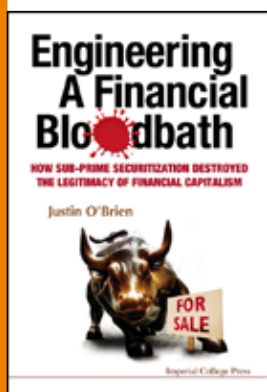
Other Title by the Author(s):

Black Holes: An Introduction, 2005

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