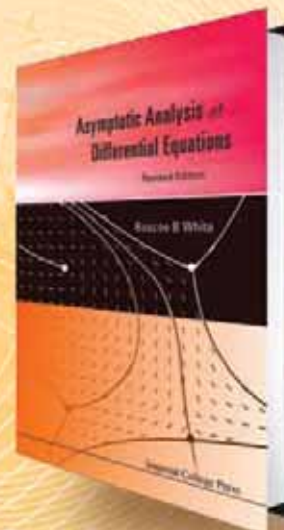
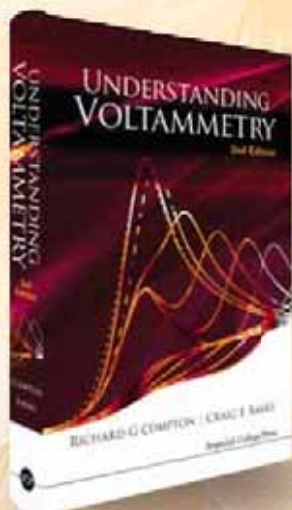
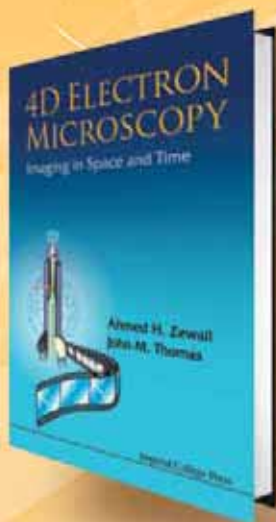




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:: 畅销书

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"This is a unique and ground-breaking book. For the first time it includes the important time dimension in electron microscopy, revealing time-resolved electron micrographs and diffraction patterns on an almost unbelievably fast time scale..."

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360pp	Dec 2009	
978-1-84816-390-4	US\$88	£66
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978-1-84816-391-1(ebook)	US\$114	

理解伏安法

UNDERSTANDING VOLTAMMETRY

(2nd Edition)

by **Richard G Compton**
(University of Oxford)

Craig E Banks
(Manchester Metropolitan University, UK)

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

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

444pp	Dec 2010	
978-1-84816-585-4	US\$115	£71
978-1-84816-586-1(pbk)	US\$64	£40

微分方程渐进分析

ASYMPTOTIC ANALYSIS OF DIFFERENTIAL EQUATIONS

(Revised Edition)

by **Roscoe B White**
(Princeton University)

The book gives the practical means of finding asymptotic solutions to differential equations, and relates WKB methods, integral solutions, Kruskal-Newton diagrams, and boundary layer theory to one another. The construction of integral solutions and analytic continuation are used in conjunction with the asymptotic analysis, to show the interrelatedness of these methods. The emphasis is on the various techniques of analysis: obtaining asymptotic limits, connecting different asymptotic solutions, and obtaining integral representation.

Contents: Dominant Balance; Exact Solutions; Complex Variables; Local Approximate Solutions; Phase-Integral Methods I; Perturbation Theory; Asymptotic Evaluation of Integrals; The Euler Gamma Function; Integral Solutions; Expansion in Basis Functions; Airy; Phase-Integral Methods II; Bessel; Weber and Hermite; Whittaker and Watson; Inhomogeneous Differential Equations; The Riemann Zeta Function; Boundary Layer Problems.

432pp	Aug 2010	
978-1-84816-607-3	US\$107	£74
978-1-84816-608-0(pbk)	US\$52	£36

ICP Imperial College Press
www.icpress.co.uk

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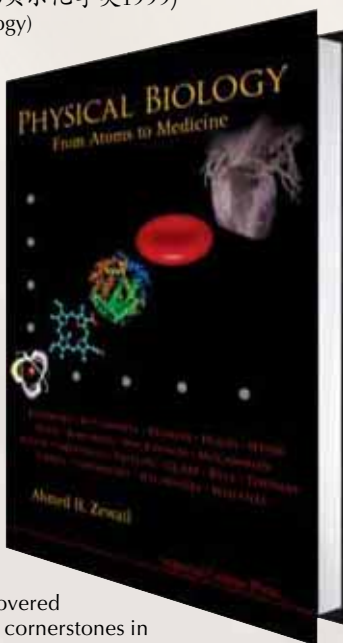
化学和生命科学

PHYSICAL BIOLOGY

From Atoms to Medicine

edited by **Ahmed H Zewail** (诺贝尔化学奖1999)
(California Institute of Technology)

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.



584pp
978-1-84816-199-3 May 2008 US\$177 £98
978-1-84816-200-6(pbk) US\$88 £48
978-1-84816-201-3(ebook) US\$230

THE HISTORY OF IMPERIAL COLLEGE LONDON, 1907-2007

Higher Education and Research in Science, Technology and Medicine

by **Hannah Gay**
(Imperial College London)

"Accessibility and vast reference material justifies The History of Imperial College London's place on the bookshelf of any institutional historian of science and technology. Gay has provided a well-researched glimpse into the broader role of higher education in 20th century British history."

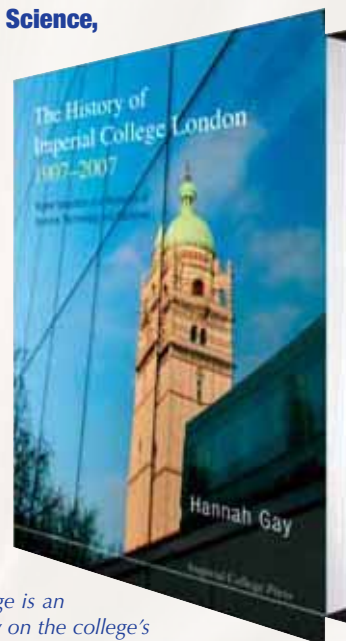
History and Philosophy of the Life Sciences

"... it deserves a place as an important reference work for anyone interested in the history of science and technology or of higher education in Britain during the twentieth century."

AMBIX

"Overall, Gay's history of Imperial College is an invaluable source of information not only on the college's history, but more broadly on the history of science, technology and medicine in the United Kingdom during the twentieth century."

The British Journal for the History of Science



856pp
978-1-86094-708-7 Feb 2007 US\$150 £103
978-1-86094-709-4(pbk) US\$73 £51
978-1-86094-818-3(ebook) US\$195

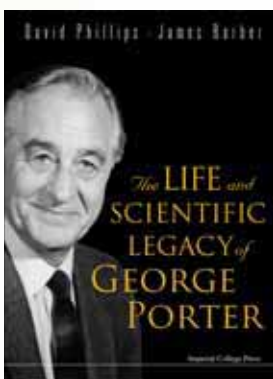
THE LIFE AND SCIENTIFIC LEGACY OF GEORGE PORTER

edited by **David Phillips** (Imperial College London) & **James Barber** (Imperial College London)

"This book will be of interest to his colleagues and contemporaries in physical chemistry, and indirectly to historians via the first-hand attributions of Porter's influence. Between the lines, this book is a catalogue of the credentials of the great and the good of two generations in British chemistry."

AMBIX

Sir George Porter (Lord Porter of Luddenham) was one of the most highly regarded and well known scientists in Britain. He was appointed Director of the Royal Institution in 1966, awarded a Nobel Prize in Chemistry in 1967, and was the only Director of the Royal Institution to later become President of the Royal Society (1985-1990). Porter had a marvellous gift for communicating his infectious enthusiasm for science, and as President of the Royal Society, he worked hard to improve the status of science, and employed his communication skills ably in the defence of British science under attack from inadequate government funding, of which he was fiercely critical. In this volume, his peers, former colleagues, students and friends — themselves highly regarded and well known scientists in their own right — come together to honour and celebrate the enormous contributions of this man. They comment on their respective personal and working relationships with Porter and on his work.



652pp
978-1-86094-660-8 Jul 2006 US\$184 £127
978-1-86094-695-0(pbk) US\$100 £69
978-1-86094-893-0(ebook) US\$239

PHYSICAL PROPERTIES OF CARBON NANOTUBES

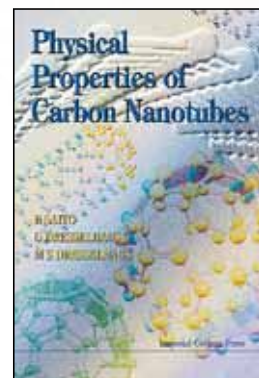
by **R Saito** (University of Electro-Communications, Tokyo), **G Dresselhaus** (MIT), & **M S Dresselhaus** (MIT)

"The book is a well organized systematic treatise that should be enjoyed by any researcher in the field as well as by graduate students. Theories and experiments are truly organically linked in the text and this is its unique feature."

Fullerene Science & Technology

"Those involved in the research of carbon nanotubes will find this book useful for understanding the basic properties of carbon tube materials."

IEEE Electrical Insulation Magazine



This is an introductory textbook for graduate students and researchers from various fields of science who wish to learn about carbon nanotubes. The field is still at an early stage, and progress continues at a rapid rate. This book focuses on the basic principles behind the physical properties and gives the background necessary to understand the recent developments. Some useful computational source codes which generate coordinates for carbon nanotubes are also included in the appendix.

272pp
978-1-86094-093-4 Jul 1998 US\$44 £30
978-1-86094-223-5(pbk) US\$30 £21
978-1-86094-379-9(ebook) US\$57

物理

ICP Fluid Mechanics – Vol. 1

INSTABILITIES, CHAOS AND TURBULENCE

(2nd Edition)
by **Paul Manneville**
(Ecole Polytechnique)

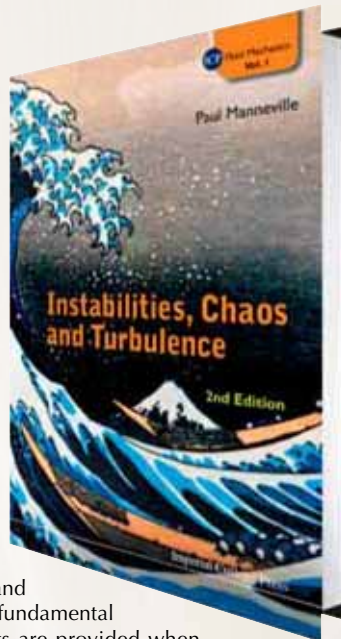
This book (2nd edition) is a self-contained introduction to a wide body of knowledge on nonlinear dynamics and chaos. Manneville emphasises the understanding of basic concepts and the nontrivial character of nonlinear response, contrasting it with the intuitively simple linear response. He explains the theoretical framework using pedagogical examples from fluid dynamics, though prior knowledge of this field is not required. Heuristic arguments and worked examples replace most esoteric technicalities. Only basic understanding of mathematics and physics is required, at the level of what is currently known after one or two years of undergraduate training: elementary calculus, basic notions of linear algebra and ordinary differential calculus, and a few fundamental physical equations (specific complements are provided when necessary). Methods presented are of fully general use, which opens up ample windows on topics of contemporary interest. These include complex dynamical processes such as patterning, chaos control, mixing, and even the Earth's climate. Numerical simulations are proposed as a means to obtain deeper understanding of the intricacies induced by nonlinearities in our everyday environment, with hints on adapted modelling strategies and their implementation.

Contents: Introduction and Overview; First Steps in Nonlinear Dynamics; Life and Death of Dissipative Structures; Nonlinear Dynamics: From Simple to Complex; Characterising and Using Chaos; Nonlinear Dynamics of Patterns; Open Flows: Instability and Transition; Developed Turbulence; Summary and Perspectives.

Readership: Scientists, engineers and mathematicians.

456pp Jul 2010
978-1-84816-392-8 US\$118 £82

:: 教科书



PHYSICS OF THE UNIVERSE

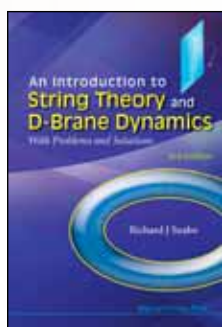
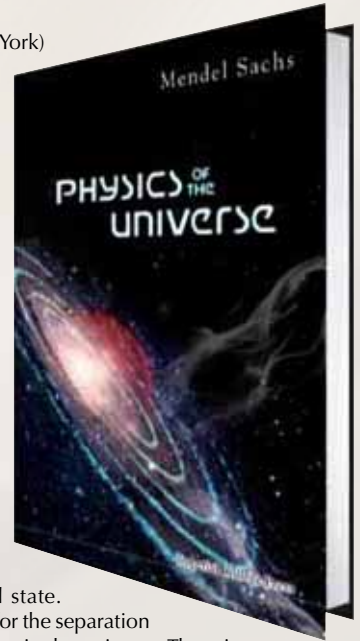
by **Mendel Sachs**
(University at Buffalo,
The State University of New York)

This book presents a new approach to the subject of cosmology. It fully exploits Einstein's theory of general relativity. It is found that the most general formal expression of the theory replaces the (10-component) tensor formalism with a (16-component) quaternion formalism. This leads to a unified field theory, where one field incorporates gravitation and electromagnetism. The theory predicts an oscillating universe cosmology with a spiral configuration. Dark matter is explained in terms of a sea of particle-antiparticle pairs, each in a particular (derived) ground state. This leads to an explanation for the separation between matter and antimatter in the universe. There is a brief discussion of black holes and pulsars. The final chapter delves into philosophical considerations such as the different types of 'truth', positivism versus realism and a discussion of the role of the Mach principle in physics and cosmology.

Contents: Physics of the Universe; A Language of Cosmology: The Mathematical Basis of General Relativity; A Unified Field Theory in General Relativity: Extension from the Tensor to the Quaternion Language; An Oscillating, Spiral Universe Cosmology; Dark Matter; Concluding Remarks; Philosophical Considerations.

Readership: Academics, physicists and graduates interested in cosmology and theory of general relativity.

148pp Mar 2010
978-1-84816-532-8 US\$54 £37
978-1-84816-604-2(pbk) US\$32 £22
978-1-84816-533-5(ebook) US\$70



AN INTRODUCTION TO STRING THEORY AND D-BRANE DYNAMICS

With Problems and Solutions
(2nd Edition)

by **Richard J Szabo**
(Heriot-Watt University, UK)

This invaluable book provides a quick introduction to the rudiments of perturbative string theory and a detailed introduction to the more current topic of D-brane dynamics. The presentation is very pedagogical, with much of the technical detail streamlined. The rapid but highly coherent introduction to the subject is perhaps what distinguishes this book from other string theory or D-brane books. This second edition includes an additional appendix with solutions to the exercises, thus expanding on some of the technical material and making the book more appealing for use in lecture courses. The material is based on mini-courses in theoretical high energy physics delivered by the author at various summer schools, so its actual level has been appropriately tested.

170pp Nov 2010
978-1-84816-622-6 US\$68 £42
978-1-84816-624-0(ebook) US\$88

THE UNIVERSE

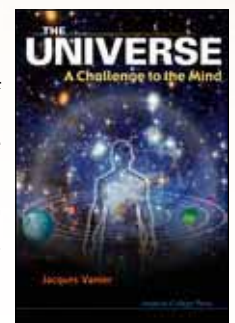
A Challenge to the Mind

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

In this book the author gives a comprehensive picture of the physical laws that appear to regulate the functioning of the Universe from the atomic to the cosmic world. The book offers a description of the main fields of physics — classical physics, relativity, quantum mechanics and particle physics — as they are applied to the atomic world and the cosmos to describe how the whole Universe has evolved to the present state. The description concentrates on the essentials, describing our present knowledge of those physical laws and outlining our limitations in understanding the whole picture. This is done essentially without equations, except for a few important ones. The text includes a short Annex for mathematically inclined readers who wish to see how the physical principles and laws expressed in words can be visualized in the language of mathematics, but the book can be read without referring to that Annex. Also, *The Universe* explains in depth those laws and outlines their limitations. The author, however, does this in an accessible language that should be understandable to non-specialists. In particular, he occasionally uses two young characters placed in various situations to explain the physics involved in those situations by means of their observations. The author uses also numerous clear pictures and graphics that make the text more easily comprehensible.

532pp Sep 2010
978-1-84816-601-1 US\$120 £74
978-1-84816-602-8(pbk) US\$54 £33

:: 教科书



物理

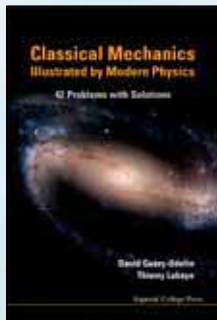
:: 教科书

CLASSICAL MECHANICS ILLUSTRATED BY MODERN PHYSICS

42 Problems with Solutions

by **David Guéry-Odelin** (Paul Sabatier University) & **Thierry Lahaye** (Paul Sabatier University)

This book provides an illustration of classical mechanics in the form of problems (at undergraduate level) inspired — for the most part — by contemporary research in physics, and resulting from the teaching and research experience of the authors. A noticeable feature of this book is that it emphasizes the experimental aspects of a large majority of problems. All problems are accompanied by detailed solutions: the calculations are clarified and their physical significance commented on in-depth. Within the solutions, the basic concepts from undergraduate lectures in classical mechanics, necessary to solve the problems, are recalled when needed. The authors systematically mention recent bibliographical references (most of them freely accessible via the Internet) allowing the reader to deepen their understanding of the subject, and thus contributing to the building of a general culture in physics.



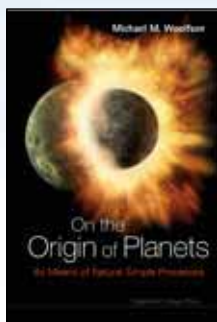
268pp	Aug 2010	
978-1-84816-479-6	US\$90	£59
978-1-84816-480-2(pbk)	US\$45	£30
978-1-84816-481-9(ebook)	US\$117	

ON THE ORIGIN OF PLANETS

By Means of Natural
Simple Processes

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

The book begins with a historical review of four major theories for the origin of the Solar System in particular, or of planets in general, which highlight the major problems that need to be solved by any plausible theory. In many theories, including that which form the major theme of this book, the formation of planets and stars is intimately linked, so four chapters are devoted to the processes that can be described as the birth, life and death of stars. Recent observations that have revealed the existence of planets around many Sun-like stars are described in detail, followed by a clear exposition of the Capture Theory for the origin of planets. Many aspects of this theory are illustrated with sophisticated computer modelling that convincingly demonstrates the plausibility of the theory. The Capture Theory is in complete accord with all observations, including the estimate it gives for the proportion of Sun-like stars with planets. It is the only theory that sits comfortably with all present observational and theoretical constraints.



500pp	Sep 2010	
978-1-84816-598-4	US\$90	£56
978-1-84816-599-1(pbk)	US\$49	£30
978-1-84816-600-4(ebook)	US\$117	

INTRODUCTORY QUANTUM PHYSICS AND RELATIVITY

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

"A good, solid and very readable exposition of the subject that will appeal to both students and specialists."

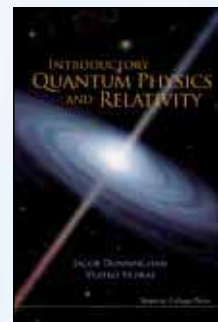
Professor Artur Ekert, University of Oxford

"This is an ambitious book aimed to provide an introduction to both the revolutionary theories of the twentieth century, quantum mechanics and special relativity, beginning from a historical perspective but advancing to topics of recent interest such as entanglement and quantum computing."

Professor Tom Kibble, Imperial College London

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

200pp	Oct 2010	
978-1-84816-514-4	US\$68	£45
978-1-84816-515-1(pbk)	US\$38	£25



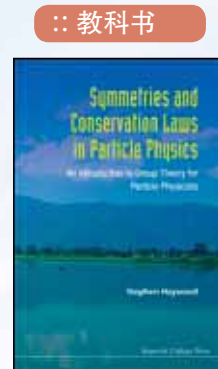
SYMMETRIES AND CONSERVATION LAWS IN PARTICLE PHYSICS

An Introduction to Group Theory for Particle Physicists

by **Stephen Haywood** (Rutherford Appleton Laboratory)

This book will explain how group theory underpins some of the key features of particle physics. It will examine symmetries and conservation laws in quantum mechanics and relate these to groups of transformations. Group theory provides the language for describing how particles (and in particular, their quantum numbers) combine. This provides understanding of hadronic physics as well as physics beyond the Standard Model. The symmetries of the Standard Model associated with the Electroweak and Strong (QCD) forces are described by the groups $U(1)$, $SU(2)$ and $SU(3)$. The properties of these groups are examined and the relevance to particle physics is discussed.

168pp	Oct 2010	
978-1-84816-659-2	US\$58	£36
978-1-84816-703-2(pbk)	US\$28	£17



SCALE RELATIVITY AND FRACTAL SPACE-TIME

A New Approach to Unifying Relativity and Quantum Mechanics

by **Laurent Nottale** (Paris-Meudon Observatory)

This book provides a comprehensive survey of the development of the theory of scale relativity and fractal space-time. It suggests an original solution to the disunified nature of the classical-quantum transition in physical systems, enabling the basis of quantum mechanics on the principle of relativity, provided this principle is extended to scale transformations of the reference system. In the framework of such a newly generalized relativity theory (including position, orientation, motion and now scale transformations), the fundamental laws of physics may be given a general form that unifies and thus goes beyond the classical and quantum regimes taken separately. A related concern of this book is the geometry of space-time, which is described as being fractal and nondifferentiable.

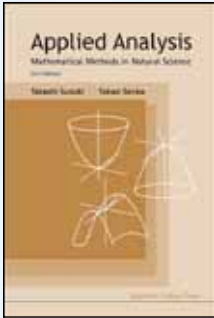
Contents: *General Introduction; Theory:* Structure of the Theory; Nondifferentiable Fractal Space-Time; Laws of Scale Transformation; Non-Relativistic Quantum Mechanics; Relativistic Quantum Mechanics; Geometric Theory of Gauge Fields; Quantum-Like Mechanics in Scale Space; *Applications:* Applications to Physics; Applications to Elementary Particles; Applications to Cosmology; Applications to Gravitational Structuring; Applications to Life and Other Sciences.

Readership: Academics, post-graduates and professionals interested in astrophysics and cosmology.

750pp	Feb 2011	
978-1-84816-650-9	US\$170	£105
978-1-84816-651-6(ebook)	US\$221	

数学

:: 教科书



APPLIED ANALYSIS

Mathematical Methods in Natural Science

(2nd Edition)

by **Takasi Senba** (*Kyushu Institute of Technology*) & **Takashi Suzuki** (*Osaka University*)

This book provides a general introduction to applied analysis; vector analysis with physical motivation, calculus of variation, Fourier analysis, eigenfunction expansion, distribution, and so forth, including a catalogue of mathematical theories, such as basic analysis, topological spaces, complex function theory, real analysis, and abstract analysis. This book also uses fundamental ideas of applied mathematics to discuss recent developments in nonlinear science, such as mathematical modeling of reinforced random motion of particles, semiconductor device equation in applied physics, and chemotaxis in biology. Several tools in linear PDE theory, such as fundamental solutions, Perron's method, layer potentials, and iteration scheme, are described, as well as systematic descriptions on the recent study of the blowup of the solution.

500pp
978-1-84816-652-3 Jan 2011
US\$98 £61

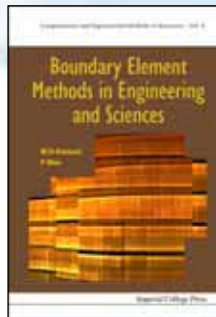
工程学

Computational and Experimental Methods in Structures – Vol. 4

BOUNDARY ELEMENT METHODS IN ENGINEERING AND SCIENCES

by **M H Aliabadi** (*Imperial College*) & **P Wen** (*Queen Mary University of London*)

The boundary element method (BEM), also known as the boundary integral equation method (BIEM), is a modern numerical technique which has enjoyed increasing popularity over the past two decades. It is now an established alternative to traditional computational methods of engineering analysis. The main advantage of the BEM is its unique ability to provide a complete solution in terms of boundary values only, with substantial savings in modeling effort. This book is designed to provide readers with a comprehensive and up-to-date account of the method and its application to problems in engineering and science. Each chapter provides a brief description of historical development, followed by basic theory, derivation and examples.



Contents: The Boundary Element Method for Geometrically Nonlinear Analyses of Plates and Shells (*P H Wen et al.*); Time-Domain BEM Techniques (*W J Mansur et al.*); The Boundary Element Method for the Fracture Analysis of the General Piezoelectric Solids (*M Denda*); Boundary Integral Analysis for Three-Dimensional Exponentially Graded Elasticity (*J E Ortiz et al.*); Fast Hierarchical Boundary Element Method for Large Scale 3D Elastic Problems (*I Benedetti et al.*); Modelling of Plates and Shallow Shells by Meshless Local Integral Equation Method (*J Sladek et al.*); Boundary Element Technique for Slow Viscous Flows About Particles (*A Sellier*); BIT for Free Surface Flows (*G Baker*); Simulation of Cavitating and Free Surface Flows using BEM (*S A Kinnas*); Condition Numbers and Local Errors in the Boundary Element Method (*W Dijkstra et al.*).

Readership: Graduate students, academics and researchers in engineering mechanics, materials engineering, mechanical engineering, and software engineering/programming.

450pp
978-1-84816-579-3 Oct 2010
US\$124 £86
978-1-84816-580-9(ebook) US\$161

Imperial College Press Optimization Series – Vol. 1

MOMENTS, POSITIVE POLYNOMIALS AND THEIR APPLICATIONS

by **Jean Bernard Lasserre** (*LAAS-CNRS & Institute of Mathematics, University of Toulouse*)

“... Experts in real algebra, real algebraic geometry, functional analysis and all other subjects mentioned above can use the book as a desk reference and historical-bibliographical guide ... the topics of Lasserre's text are so fresh and explosive because for the first time here the functional analytic positivity met real algebra positivity in a versatile applied framework.”

Mihai Putinar

University of California at Santa Barbara, USA

This book introduces a new general methodology to solve the GMP when its data are polynomials and basic semi-algebraic sets. This methodology combines semidefinite programming with recent results from real algebraic geometry to provide a hierarchy of semidefinite relaxations converging to the desired optimal value.

Contents: Moments and Positive Polynomials: The Generalized Moment Problem; Positive Polynomials; Moments; Algorithms for Moment Problems; **Applications:** Global Optimization over Polynomials; Systems of Polynomial Equations; Applications in Probability; Markov Chains Applications; Application in Mathematical Finance; Application in Control; Convex Envelope and Representation of Convex Sets; Multivariate Integration; Min-Max Problems and Nash Equilibria; Bounds on Linear PDE.

Readership: Postgraduates, academics and researchers in mathematical programming, control and optimization.

384pp
978-1-84816-445-1 Oct 2009
US\$85 £58
978-1-84816-446-8(ebook) US\$111

计算机科学

Advances in Computer Science and Engineering: Texts – Vol. 4

ANALYSIS AND SYNTHESIS OF COMPUTER SYSTEMS

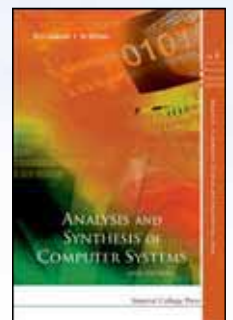
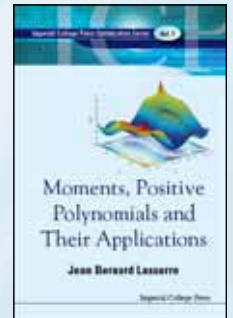
(2nd Edition)

by **Erol Gelenbe** (*Imperial College*) & **Isi Mitrani** (*University of Newcastle upon Tyne*)

This book will have a broad appeal to students, practitioners and researchers in several different areas, including practicing computer engineers as well as computer science and engineering students.

Contents: Basic Tools of Probabilistic Modelling; The Queue with Server of Walking Type and Its Applications to Computer System Modelling; Queuing Network Models; Queuing Networks with Multiple Classes of Positive and Negative Customers and Product Form Solution; Markov-Modulated Queues; Diffusion Approximation Methods for General Queuing Networks; Approximate Decomposition and Iterative Techniques for Closed Model Solution; Synthesis Problems in Single-Resource Systems: Characterisation and Control of Achievable Performance; Control of Performance in Multiple-Resource Systems; A Queue with Server of Walking Type.

324pp
978-1-84816-395-9 Apr 2010
US\$99 £68
978-1-84816-396-6(ebook) US\$129



环境科学

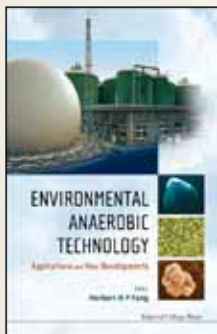
ENVIRONMENTAL ANAEROBIC TECHNOLOGY

Applications and New Developments

edited by **Herbert H P Fang**
(The University of Hong Kong)

Anaerobic technology has become widely accepted by the environmental industry as a cost-effective alternative to the conventional aerobic process. In addition, with the intrinsic advantages of energy saving, reduced sludge yield, and production of biofuel, anaerobic process will be the favored green treatment technology for sustainable environment in years to come. Written by 40 renowned experts from 13 countries/regions, this book consists of 18 chapters compiling state-of-the-art information on new developments in various aspects of anaerobic technology. These include development of new types of reactors, uses of molecular techniques for microbial studies and mathematical modeling, productions of bio-hydrogen by fermentation and microbial electrolysis cell, as well as broadening applications to the treatment of municipal wastewater, effluents from chemical industry and agricultural wastes with high lignocellulose content.

420pp **Oct 2010**
978-1-84816-542-7 **US\$149 £103**
978-1-84816-543-4(ebook) **US\$194**



Series on Environmental Science and Management – Vol. 6

ISOTOPE HYDROLOGY

A Study of the Water Cycle

by **Joel R Gat** (Weizmann Institute of Science)

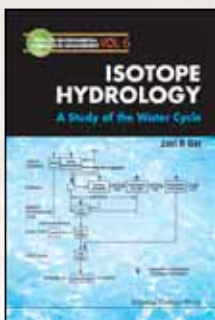
Within the realm of the newly evolving discipline of environmental sciences, the stable-isotope methodology is being used to an ever-increasing extent, especially in the study of the water cycle and of paleo-climatology. This book introduces the rules of the game, by reviewing the natural variability of stable isotopes in the hydrosphere, describing the physico-chemical basis of isotope fractionation, and applying this knowledge to natural waters as they move through the hydrologic cycle from the ocean to the atmosphere, the biosphere and the lithosphere. There is a special focus on the processes at the surface-atmosphere and land-biosphere-atmosphere interfaces, since these are the sites of major changes in isotope composition. In response to the increasing awareness of our changing climate, a discussion on the global view of the changing water cycle, in the past and future, winds up the presentation.

Contents: The Hydrosphere — An Overview; The Isotopes of Hydrogen and Oxygen; Isotope Fractionation; Models of Isotopic Change in the Water Cycle; The Ocean System and the Marine Atmosphere; Clouds and Precipitation; Snow and Snowmelt Processes; The Land-Biosphere-Atmosphere Interface; Surface Waters; Water in Soils and Plants; Saline Waters; Sub-Surface Waters; The Continental Scale Water Balance and Its Isotopic Signature; Isotopes and Climate Change.

Readership: Graduates in hydrology and environmental science, and water engineers.

200pp **Jan 2010**
978-1-86094-035-4 **US\$48 £32**
978-1-84816-474-1(ebook) **US\$62**

:: 畅销书



ICP Series on Climate Change Impacts, Adaptation, and Mitigation – Vol. 1

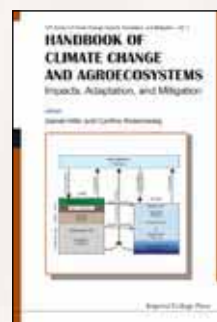
HANDBOOK OF CLIMATE CHANGE AND AGROECOSYSTEMS

Impacts, Adaptation, and Mitigation

edited by **Daniel Hillel** (Columbia University, & Goddard Institute for Space Studies) & **Cynthia Rosenzweig** (Columbia University & Goddard Institute for Space Studies)

This handbook presents an exposition of current research on the impacts, adaptation, and mitigation of climate change in relation to agroecosystems. It is offered as the first volume in what is intended to be an ongoing series dedicated to elucidating the interactions of climate change with a broad range of sectors and systems, and to developing and spurring effective responses to this global challenge. As the collective scientific and practical knowledge of the processes and responses involved continues to grow, future volumes in the series will address important aspects of the topic periodically over the coming years.

452pp **Sep 2010**
978-1-84816-655-4 **US\$168 £104**
978-1-84816-656-1(ebook) **US\$218**



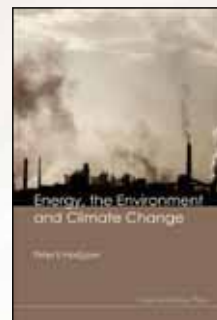
:: 畅销书

ENERGY, THE ENVIRONMENT AND CLIMATE CHANGE

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

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

224pp **Mar 2010**
978-1-84816-415-4 **US\$88 £61**
978-1-84816-417-8(ebook) **US\$114**



保健 / 医学

CONTESTED CELLS

Global Perspectives on the Stem Cell Debate

edited by **Benjamin J Capps** (National University of Singapore) & **Alastair V Campbell** (National University of Singapore)

This book represents the coming together of a number of internationally renowned scholars from science, philosophy, law and social science. Each author presents a distinctive and critical account of the current ethical, social and jurisprudential issues concerning stem cell science: together covering both its research beginnings, and the future translation into the clinical setting. Original to this volume is an emphasis on the inter-state implications of developments in stem cell science from the perspective of a truly global collaboration of leading authors. Academics and policy-makers will find it an invaluable contribution to the socio-political and ethical discourse of stem cell science.

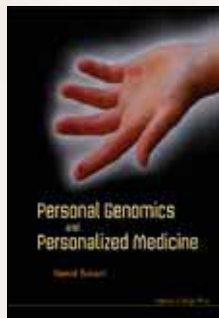
516pp **Aug 2010**
978-1-84816-437-6 **US\$123 £82**
978-1-84816-438-3(ebook) **US\$228**



PERSONAL GENOMICS AND PERSONALIZED MEDICINE

by **Hamid Bolouri**

(California Institute of Technology)



"Hamid Bolouri's book represents a landmark achievement in the coming revolution that will usher in personal genomics and the era of personalized medicine. The truth of this will be increasingly obvious as this era approaches, but it will certainly be plain to see after you read his book."

Jim Karkanias

Microsoft Health Solutions Group

"The future of personalized medicine depends upon an understanding of the genome and its relationship to the probability of developing disease. This book explains the science, the policy, and the medicine in a way that enlightens readers seeking a better understanding of themselves."

John Halamka

CareGroup Health System, Harvard Medical School

"Preserving the health benefits of genomics while minimizing the harms will be an important research goal. In that regard, Bolouri's exploration is a timely addition."

Nature

272pp

Dec 2009

978-1-84816-564-9

US\$68

£51

978-1-84816-565-6(pbk)

US\$45

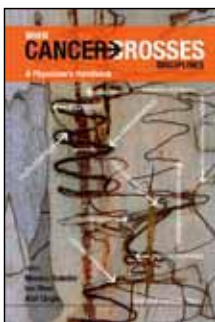
£34

WHEN CANCER CROSSES DISCIPLINES

A Physician's Handbook

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

This volume answers these and many other questions, spanning from cancer prevention to palliative care. Each chapter is comprehensively referenced, to allow the reader to explore related fields in more detail. 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.

1196pp

Nov 2009

978-1-84816-364-5

US\$157

£108

978-1-84816-365-2(ebook)

US\$204

化学和生命科学

Molecular Medicine and Medicinal Chemistry – Vol. 3

DNA DEAMINATION AND THE IMMUNE SYSTEM

AID in Health and Disease

edited by **Sebastian Fugmann** (National Institute of Health), **Marilyn Diaz** (National Institute of Health), & **Nina Papavasiliou** (Rockefeller University)

This book covers the current understanding of the role of activation-induced cytidine deaminase (AID) in the generation of antibody response to antigenic challenge. Since the discovery of AID, and the genetic demonstration of its role in somatic hypermutation and class-switch recombination of antibody genes, much has been learned about the biochemistry of this enzyme. However, some key questions remain hotly contested, such as: how does this enzyme get to the antibody locus leaving the rest of the genome intact, and why are DNA repair pathways which normally repair deamination events co-opted into actually fixing mutations into the genome? These questions, among others, will be addressed in this monograph from various perspectives. Being leading experts in their respective fields, the contributors of this highly valued title summarize current research in the field of AID and put forth hypotheses in order to provide a platform for future experiments.

200pp

Oct 2010

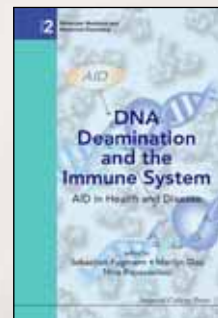
978-1-84816-592-2

US\$78

£54

978-1-84816-593-9(ebook)

US\$101



ICP Selected Papers – Vol. 1

THE SELECTED PAPERS OF SIR ALAN FERSHT

Development of Protein Engineering

edited by **Alan R Fersht** (University of Cambridge) & **Qinghua Wang** (Baylor College of Medicine)

This book compiles a collection of original scientific articles written by Professor Sir Alan Fersht over 40 years of his scientific career. A long-standing icon in the fields of enzymology, protein folding, and protein engineering, Sir Alan Fersht is also one of the world's greatest protein chemists, whose work has been extensively recognized by countless international awards in both chemistry and molecular biology. He has produced a number of classic papers that are cited regularly because of the originality of his work and his insightful analysis. The study of his work on the fusion of physical chemistry and molecular biology provides a course on how to approach the analysis of complex systems in a simple logical manner. His papers are models of clarity, benefitting students of protein chemistry in their understanding of the subject.

The beginning of Sir Alan Fersht's career coincided with the birth of modern protein science based on structural biology, which started in earnest momentum in the 1960s. He worked in the then Mecca of molecular biology, the MRC Laboratory of Molecular Biology, and was one of the first protein chemists to exploit the new area of structural biology. The papers are interlaced with personal comments on how each article was important in his career and how he was influenced by the galaxy of legendary scientists in the MRC.

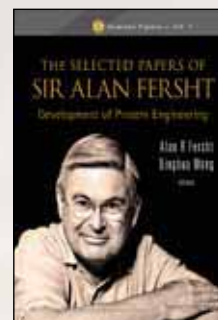
408pp

Jun 2010

978-1-84816-554-0

US\$140

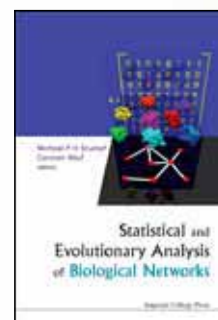
£87



STATISTICAL AND EVOLUTIONARY ANALYSIS OF BIOLOGICAL NETWORKS

edited by **Michael P H Stumpf** (Imperial College London) & **Carsten Wiuf** (Aarhus University)

This book reviews and explores statistical, mathematical and evolutionary theory and tools in the understanding of biological networks. The book is divided into comprehensive and self-contained chapters, each of which focuses on an important biological network type, explains concepts and theory and illustrates how these can be used to obtain insight into biologically relevant processes and questions. There are chapters covering metabolic, transcriptomic, protein interaction and epidemiological networks as well as chapters that deal with theoretical and conceptual material. The authors, who contribute to the book, are active, highly regarded and well-known in the network community.



180pp

Dec 2009

978-1-84816-433-8

US\$81

£56

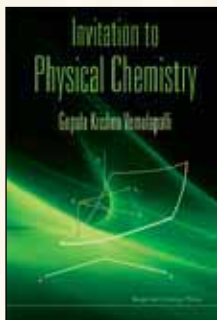
978-1-84816-434-5(ebook)

US\$105

INVITATION TO PHYSICAL CHEMISTRY

(With CD-ROM)
by **Gopala Krishna Vemulapalli**
(University of Arizona)

:: 教科书



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

Contents: Quantum Chemistry: The Schrödinger Equation, Waves and Wave Packets; Spectroscopy: Rotations and Vibrations; Atoms; Molecules; Chemical Thermodynamics: Entropy and Equilibrium; The Fundamental Equation of Thermodynamics; Thermodynamic Potentials; Chemical Potential; Statistical Thermodynamics; States of Matter; Kinetics: The Kinetic Molecular Theory of Gases; Chemical Kinetics.

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

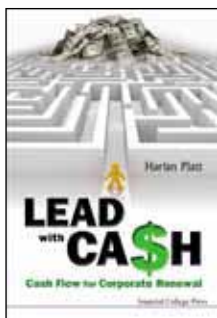
240pp Mar 2010
978-1-84816-301-0 US\$54 £37

商务和管理

LEAD WITH CASH

Cash Flow for Corporate Renewal

by **Harlan Platt** (Northeastern University)



This book takes an entirely new look at how companies ought to be managed. It argues that managers need to focus on how corporate decisions affect the firm's cash. The author, who is well known in the fields of management and crisis management, suggests that companies that follow the paradigm presented in the book are more likely to survive tumultuous times, provide higher returns to their investors, and have a conducive work environment.

Contents: Introduction; **Part I:** Lead with Cash: Achieve Great Results by Identifying the Right Target; Name the Team "Cash and More Cash"; Rationalize Costs Focusing on Cash; Make Product Decisions Based on Cash; Set Strategy with Cash; Change the Culture to One Based on Cash; Designing Cash Flow into Systems; Creating Cash with Optimal Pricing Decisions; Rethinking Capital Budgeting; The Impact of Leverage: Examining Private Equity; **Part II:** Cash Flow Basics; Working Capital and Cash Flow; The Statement of Cash Flows: Six Red Flags; Cash Flow Details; **Part III:** Reflections from Turnaround and Crisis Managers; Biographies of Contributors.

248pp Apr 2010
978-1-84816-375-1 US\$45 £30
978-1-84816-376-8(ebook) US\$59

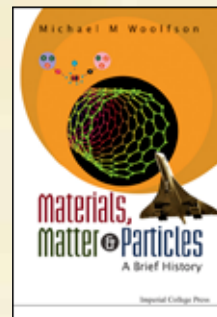
综合

MATERIALS, MATTER AND PARTICLES

A Brief History

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

:: 畅销书



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

Contents: The Elements of Nature; Early Ideas of the Nature of Matter; The Quest for Gold and Eternal Life; The Beginning of Chemistry; Modern Chemistry is Born; Nineteenth Century Chemistry; Atoms Have Structure; Radioactivity and the Plum-Pudding Model; Some Early 20th Century Physics; What is a Nucleus Made of?; Electrons in Atoms; The New Mechanics; Electrons and Chemistry; Electron Spin and the Exclusion Principle; Isotopes; Radioactivity and More Particles; Making Atoms, Explosions and Power; Observing Matter on a Small Scale; Living Matter; Life at the Atomic Level; Materials from Ancient Times; Modern Materials; The Fantastic World of Particles; How Matter Began; Making Heavier Elements.

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

328pp Oct 2009
978-1-84816-459-8 US\$68 £47
978-1-84816-460-4(pbk) US\$39 £27
978-1-84816-461-1(ebook) US\$88

SCIENCE RESEARCH WRITING FOR NON-NATIVE SPEAKERS OF ENGLISH

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

:: 畅销书



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

272pp Dec 2009
978-1-84816-309-6 US\$58 £44
978-1-84816-310-2(pbk) US\$25 £19
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