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# PHYSICS

FORTHCOMING

## Applied Physics

*Sanjay D Jain, Girish G Sahasrabudhe & Sunil M Pande*

Applied Physics has been developed for first year engineering students past examination papers. It is an attempt to help students develop fundamental ways of thinking and inventing. The book introduces theoretical concepts through the following special features:

- Historical development of the subject
- Numerical problems adapted from past examination papers to offer quantitative appreciation of parameters
- Charts to facilitate comparative learning of topics and as a tool for quick revision
- Applications to illustrate how engineering has grown through the discoveries and concepts of physics

## Classical Mechanics

*KN Srinivasa Rao*

An attempt is made in this book to present a logical development of mechanics starting from its basic principles, and it may be regarded as a companion volume to the standard texts by well-known authors.

While the material on rigid bodies and analytical mechanics can be taught at the postgraduate level, selected topics from the earlier chapters serve as instructional material even at lower levels. Another feature of the book is the unusually large number of worked examples to enable the student to gain a deeper insight into the basic principles of mechanics.

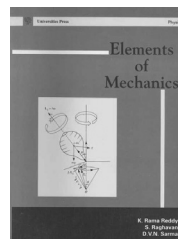
**2003 ♦ 360 pp. ♦ Paperback**

**978-81-7371-436-8 ♦ ₹ 495.00**

Prices are subject to change without notice

## Elements of Mechanics

*K R Reddy, S Raghavan & D V N Sarma*



The book begins with vector analysis which should be treated as a resource chapter. The concept of the rate of change of a vector plays an important role throughout mechanics. Analytical as well as geometrical treatment of vectors are presented for visualisation of the dynamical motions specifically of rotational dynamics. Rotating coordinate system is used to illustrate the nature of non-inertial coordinate systems to avoid confusion between forces and accelerations. The book also attempts to emphasise the connection between relativity and classical thought in a separate chapter on the Special Theory of Relativity

**1994 ♦ 348 pp. ♦ Paperback**

**978-81-7371-019-3 ♦ ₹ 295.00**

## Engineering Physics

*Sanjay D Jain & Girish G Sahasrabudhe*

*Engineering Physics* has been conceived to develop a coherent, comprehensive and practical view of physics among engineering students. This will help them to develop fundamental ways of thinking and inventing in their future engineering practice. The book attempts to break the monotony of just stating theoretical concepts through the following 5 special features:

- The historical development of the subject is traced to show interesting links between the various topics.

## PHYSICS

- Theory and experiment are integrated and learning through scientific method is emphasised by seeking agreement between theory and experiment.
- Experiments are included at appropriate places to offer quantitative appreciation of parameters involved.
- Charts are used to facilitate comparative learning of topics that share the same unifying and founding aspects.
- Applications of each topic are discussed at the end of the chapter to give an idea of how engineering grows through the utilitarian translation of discoveries and concepts in physics.

2010 ♦ 608 pp. ♦ Paperback

978-81-7371-678-2 ♦ ₹ 425.00

### Excursions in Thermodynamics and Statistical Mechanics

*KPN Murthy*

The book provides a pedagogical introduction to the history of concepts in heat, thermodynamics and statistical mechanics. The selection of topics is excellent; the prose is reader-friendly; the subject matter of the book is of fundamental importance to all students of science. The book motivates, excites and at times surprises the reader. The book is primarily on basic concepts and modern ideas. Some of the concepts described in the book are quite advanced, but they have been rendered understandable to undergraduate and even pre-university students.

2009 ♦ 152 pp. ♦ Paperback

978-81-7371-651-5 ♦ ₹ 225.00

### From Clockwork to Crapshot: A History of Physics

*Roger G Newton*

The book provides the perspective needed to understand contemporary developments in physics in relation to philosophical traditions as far back as ancient Greece.

Roger G Newton presents a history of physics from the early beginning to our day—with the associated mathematics, astronomy, and chemistry. Along the way, he gives brief explanations of the scientific concepts at issue, biographical thumbnail sketches of the protagonists, and descriptions of the new instruments that enabled scientists to make their discoveries. He traces a profound transformation from a deterministic explanation of the world—accepted at least since the time of the ancient Greek and Taoist Chinese civilizations—to the notion of probability, enshrined as the very basis of science with the quantum evolution at the beginning of the twentieth century. This brought about a fundamental shift in the focus of physicists—from dynamics or motion to the underlying architecture of the universe. Their new goal—to explain being rather than change—may well be the defining characteristic of physics in the twenty-first century.

2008 ♦ 352 pp. ♦ Paperback

978-81-7371-625-6 ♦ ₹ 395.00

### Introduction to Mechanics

*Mahendra K Verma*

*Introduction to Mechanics* offers a modern introduction to Newtonian dynamics and the basics of special relativity.

Along with a discussion of standard topics—Newton's laws of motion, energy, linear and angular momentum, rigid body dynamics, oscillations—modern topics like symmetries,

phase space, nonlinear dynamics and chaos have also been introduced.

Students are urged to work out the exercises and projects given at the end of each chapter so as to obtain a thorough understanding of the subject.

*Distributed worldwide (except India) by CRC Press LLC, USA, Taylor and Francis Group*

**2008 ♦ 356 pp. ♦ Paperback**  
**978-81-7371-627-0 ♦ ₹ 350.00**

### **Introduction to Metallurgy, An** (Second Edition)

*Sir Alan Cottrell*

This classic textbook aims to provide undergraduates with a broad overview of metallurgy from atomic theory, thermodynamics, reaction kinetics and crystal physics, to elasticity and plasticity.

**2000 ♦ 564 pp. ♦ Paperback**  
**978-81-7371-239-5 ♦ ₹ 675.00**

### **Introductory AC Circuit Theory**

*K Mann & G J Russell*

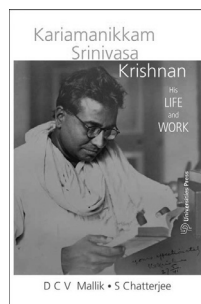
Oscillations play a very important part in modern physics, and AC theory, important as it is in its own right, provides the best introduction to the techniques common to all oscillatory problems. For this reason, this text is oriented towards the needs of science students, and also provides a first course for electrical engineering students. An elementary knowledge of field and DC circuit theory is assumed. The text provides two courses. A short course, covered in chapters 1–6, is for those students who do not wish to proceed to the operator  $\mathbf{j}$  methods treated in later chapters. The complete course provides the minimum requirements for a graduate degree in physics.

The book gives a thorough grounding in the fundamental concepts as the basis of such a course.

**2000 ♦ 224 pp. ♦ Paperback**  
**978-81-7371-325-5 ♦ ₹ 250.00**

### **Kariamanikkam Srinivasa Krishnan: His Life and Work**

*D C V Mallik & S Chatterjee*



The first four decades of the 20th century were glorious years for science, especially physics. Our view of the physical world changed forever with the emergence of quantum mechanics and Einstein's formulation of the theory of relativity. India too contributed significantly to this scientific revolution with the discoveries made by S N Bose, C V Raman and M N Saha, all in the space of about a decade. Kariamanikkam Srinivasa Krishnan (1898- 1961) belonged to the same illustrious group. He was perhaps the only Indian physicist of his generation who was equally adept in theory and experiment. Besides a life of excellence in science, Krishnan's destiny led him to be an able science policy maker and administrator. He was also a great teacher, a humanist and a scholar of Sanskrit, Tamil literature and philosophy.

This biography, besides being a detailed and meticulously documented account of Krishnan's life and his scientific work, is also an exciting account of the history of Indian science of the

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period. The source material of this work, most of which are being used for the first time, comes from the private papers of K S Krishnan that had remained in the custody of his family.

**Contents:** *Foreword* ❖ *Acknowledgement* ❖ *Prologue* ❖ *Background* ❖ *Childhood and Schooling* ❖ *College Years* ❖ *Science Education and Its Beginnings in Calcutta* ❖ *Calcutta* ❖ *Scattering of Light* ❖ *Discovery of the Raman Effect* ❖ *Dacca* ❖ *Bonds of Magnetism I: The Dacca Phase* ❖ *Winds of Change* ❖ *Bonds of Magnetism II: The Calcutta Phase* ❖ *Graphite and Its anomalous Diamagnetism* ❖ *Honours and Offers* ❖ *The Physics Chair at Allahabad* ❖ *Rejuvenating Physics in Allahabad* ❖ *The Widening Vista* ❖ *Krishnan in Delhi* ❖ *NPL: The Initial Years* ❖ *Oscillating Lattices, Emitting Surfaces, Heated Tubes* ❖ *The Broader Stage* ❖ *Into the Twilight* ❖ *Appendix:* ❖ *Raman Scattering* ❖ *Diamagnetic and Paramagnetic Susceptibilities* ❖ *Formulae for Electrical Resistivity of Metals* ❖ *Primary Sources* ❖ *Bibliography* ❖ *Index*

2011 ♦ 516 pp. ♦ Hardback

978-81-7371-748-2 ♦ ₹ 895.00

## Mathematical Methods in Classical and Quantum Physics

*Tulsi Dass & Satish K Sharma*

The book is intended to provide an adequate background for various theoretical physics courses, especially those in classical mechanics, electrodynamics, quantum mechanics and statistical physics. Each topic is dealt with in a generally self-contained manner and the text is interspersed with a number of solved examples and a large number of exercise problems.

1998 ♦ 716 pp. ♦ Paperback

978-81-7371-089-6 ♦ ₹ 725.00

## Mathematical Physics: The Basics

*S D Joglekar*

This is the first of a two-volume set which covers the basic mathematical techniques essential at the master's level in physics and chemistry. It provides the basic underlying preparation needed for research in science.

This volume deals with vectors, tensors, Cartesian coordinates, Lorentz tensors, curvilinear coordinates, linear vector spaces, linear operators, matrices, complex variables and their applications at an advanced level.

*Distributed worldwide (except India) by CRC Press LLC, USA, Taylor and Francis Group*

2005 ♦ 256 pp. ♦ Paperback

978-81-7371-422-1 ♦ ₹ 325.00

## Mathematical Physics: Advanced Topics

*S D Joglekar*

This is a companion volume to *Mathematical Physics: The Basics*. *The Basics* covered topics like vectors, tensors, Cartesian coordinates, Lorentz tensors, curvilinear coordinates, linear vector spaces, linear operators, matrices, complex variables and their applications. This book covers more advanced topics which include: ODE, gamma and beta functions, Bessel functions, spherical harmonics and special functions, partial differential equations, generalised functions, and group theory. Together, the two volumes cover the subject of mathematical physics for a PG course in physical sciences.

*Distributed worldwide (except India) by CRC Press LLC, USA, Taylor and Francis Group*

2006 ♦ 264 pp. ♦ Paperback

978-81-7371-560-0 ♦ ₹ 325.00

**Optical Communication***M Mukunda Rao*

This book deals with optical electronics and communication, and is intended as a core textbook for use both at the undergraduate and postgraduate levels in engineering colleges. The author discusses a number of important aspects like optical sources, transmission mediums, optical fibres, photodetectors, optical receivers, and modulation and remodulation systems. Each concept is systematically presented starting with the historical background and subsequent developments.

**2000 ♦ 208 pp. ♦ Paperback**  
**978-81-7371-090-2 ♦ ₹ 275.00**

**Overview of Basic Theoretical Physics, An***K D Abhyankar & A W Joshi*

This book covers both the pre-quantum and post-quantum development of theoretical physics in a straightforward but fairly rigorous style. Unlike most modern physics courses which gloss over the basic physics subjects in preference to specialised topics like solid state physics, electronics, plasma physics, nanotechnology, cosmology, astrophysics and computer science, this book brings together the various branches of theoretical physics on one platform to give a panoramic view of the subject. The first four chapters of the book deal with the classical topics of Hamiltonian mechanics, theories of relativity, electromagnetic theory of radiation and thermodynamics. They are followed by chapters on atomic spectra and quantum mechanics, spectra of diatomic molecules, quantum theory of radiation, statistical mechanics, and nuclear and particle physics. Guided exercises form a unique feature of this book.

**2009 ♦ 512 pp. ♦ Paperback**  
**978-81-7371-655-3 ♦ ₹ 550.00**

**Physics of Semiconductor Devices**  
(Revised Edition)*Dilip K Roy*

This book is a comprehensive and up-to-date text providing a lucid perspective of the important concepts and applications of semiconductor devices. It discusses the quantum mechanical tunnel effect on the principles of quantum measurement and observations, and its application in the analysis of I-V characteristics of tunnel devices.

In this edition, the basic outline of the book and its underlying philosophy remain unchanged. The discussions on 'quantum mechanical tunnelling' have been updated. Most of the problems in the first edition have been retained and a large number of problems have been added both as solved examples and as unsolved exercises. It also contains appendices on amorphous semiconductors and the technology involved in the preparation of semiconductor devices.

**2004 ♦ 488 pp. ♦ Paperback**  
**978-81-7371-494-8 ♦ ₹ 475.00**

**Quantum Field Theory: In a Nutshell***A Zee*

An esteemed researcher and acclaimed popular author takes up the challenge of providing a clear, relatively brief, and fully up-to-date introduction to one of the most vital but notoriously difficult subjects in theoretical physics. A quantum field theory text for the twenty-first century, this book makes the essential tool of modern theoretical physics available to any student who has completed a course on quantum mechanics and is eager to go on.

Stressing critical ideas and insights, Zee uses numerous examples to lead students to a true conceptual understanding of quantum field theory—what it means and what it can do. He covers an unusually diverse range of topics, including various contemporary developments,

while guiding readers through thoughtfully-designed problems. In contrast to previous texts, Zee incorporates gravity from the outset and discusses the innovative use of quantum field theory in modern condensed matter theory. Offering a remarkably accessible conceptual introduction, this text will be widely welcomed and used.

**2004 ♦ 536 pp. ♦ Paperback**  
**978-81-7371-512-9 ♦ ₹ 575.00**

### Quantum Mechanics

*Trilochan Pradhan*

This book presents a novel treatment of some unusual topics of non-relativistic theory of quantum mechanics, not often covered in classic texts. Notable among these are the first quantised theory of photons and neutrons (most books give the second quantised theory); Bohr–Sommerfeld ‘action’ as differential operators with their eigenvalues  $n$  and  $l$  and their corresponding eigenfunctions; parbose and parafermi symmetries of identical particles; Dirac’s initiation of Lagrangian formulation of quantum mechanics (also known as transformation theory) and its elaboration and completion by Feynman; topological phase of the wavefunction in Bohm–Aharonov, Aharonov–Casher and neutron interferometer experiments (examples of the Berry phase); and quantum beats such as Stark and exchange oscillations similar to  $\bar{K}_0K_0$  and neutrino oscillations in particle physics.

*Distributed worldwide (except India) by Anshan Limited, UK*

**2008 ♦ 252 pp. ♦ Paperback**  
**978-81-7371-624-9 ♦ ₹ 395.00**

### Schrödinger’s Kittens and the Search for Reality

*John Gribbin*

In this fascinating book, *John Gribbin* presents the latest evidence about the nature of light, the phenomenon that is the key ingredient in both quantum theory and relativity. The ‘kittens’ of his title are the offspring of Schrödinger’s famously indeterminate cat, and their adventures as they are carried to opposite ends of the universe, are a neat way of visualizing the many perplexing paradoxes of the new view of reality. All of this is of much more than just theoretical interest. The practical applications are equally astounding, as John Gribbin describes the serious possibility that quantum theory could eventually be used to develop a Star Trek-style teleportation machine, and how it has already found applications in the development of uncrackable codes.

**1999 ♦ 272 pp. ♦ Paperback**  
**978-81-7371-242-5 ♦ ₹ 295.00**

### Statistical Mechanics: An Elementary Outline (Revised Edition)

*Avijit Lahiri*

Compared to the previous edition where the quantum theoretic development of the subject was chosen from the very beginning, the present edition chooses the classical theory as the launching pad by introducing a number of key concepts so as to make the subject accessible to a wider section of readers. At the same time, the technical soundness of presentation has been raised to a higher level by way of using the concepts of the mixed state and the reduced state as the basic building blocks of the theory and of relating equilibrium statistical mechanics to the long-term time evolution of the reduced state. The author avoids technically rigorous, formal analysis in favour of offering a clear



understanding at a semi-intuitive level. The book combines soundness of presentation with lucidity, so essential for the student aiming at a serious but enjoyable first exposure to the subject.

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**2008 ♦ 290 pp. ♦ Paperback**  
**978-81-7371-614-0 ♦ ₹ 325.00**

### **Superconductivity Today: An Elementary Introduction** (Second Edition)

*T V Ramakrishnan & C N R Rao*

This book explains the fascinating subject of superconductivity in an easily understandable language. It exhaustively reviews the developments in this area, covering both experimental results and present theoretical understanding, and arouses the excitement of readers and research workers by highlighting new areas of its application.

**1999 ♦ 128 pp. ♦ Paperback**  
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### **Wavelets: A Primer**

*Christian Blatter*

The wavelet transform, with its many applications, has become a major new mathematical technique. It has stimulated research unparalleled since the invention of the Fast Fourier Transform (FFT) and opened new avenues of application in signal processing, image compression, radiology, cardiology, and many other areas. This book grew out of a short course for mathematics students at the ETH in Zurich; it provides a solid, yet accessible, mathematical foundation for those interested in learning about wavelets and pursuing the broad range of applications for which the wavelet transform has proved successful. Numerous

illustrations and fully worked-out examples further enhance the value of this exemplary introduction to the field.

**2003 ♦ 216 pp. ♦ Paperback**  
**978-81-7371-449-8 ♦ ₹ 250.00**

### **Wavelets: Theory, Applications, Implementation**

*M V Altaisky*

This book aims at presenting a deductive scheme to show where and when the scale-invariance of Nature meets the representations of the affine group. It includes standard trends in wavelet analysis and discrete wavelet transform, some results obtained by the author in collaboration with different people in data processing, and a number of C++ programs which can be used by physicists, economists or biologists for the analysis of the time series. The general mathematical and physical ideas of wavelets are presented without sinking into details of elaborate numeric schemes; at the same time it enables the reader to solve wavelet-related problems on the computer. The book also contains some new ideas developed by the author for non-standard applications of wavelets in quantum mechanics, quantum field theory and biology.

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**978-81-7371-503-7 ♦ ₹ 275.00**

## ASTROPHYSICS

### **Astrophysics of the Solar System**

*K D Abhyankar*

This book attempts to broadly deal with the mechanics and dynamics of the Solar System with additional emphasis on celestial mechanics. Important planetary laws and theories like the

## PHYSICS

geocentric theory, Kepler's laws, Newton's law of gravitation, the catastrophic theories of Moulton, Russel and Schmidt, and the nebular hypothesis of Kant and Laplace are clearly explained. The book also deals with space dynamics and rocket propulsion, solar activities, lunar studies, small bodies and extraterrestrial life.

1999 ♦ 272 pp. ♦ Paperback  
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### **Astrophysics: Stars and Galaxies**

*K D Abhyankar*

This book introduces the subject of astrophysics to honours and postgraduate students of physics, without the necessity of their being familiar with all the practical details of modern astronomical techniques of observation and deduction of data. The emphasis is on showing how an application of the commonly known laws of physics gives us important information about the properties of celestial objects and phenomena.

2001 ♦ 576 pp. ♦ Paperback  
978-81-7371-381-1 ♦ ₹ 695.00

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*G Venkataraman*

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*G Srinivasan*

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*Jayant V Narlikar*

This book is based on lectures given by the author at a number of universities with the aim of introducing Cosmology to students and teachers at the graduate level. Here, cosmology is explained within the framework of Newtonian gravity and mechanics thereby making it readily understandable to students of Physics and Mathematics at the undergraduate level. The description is up-to-date and includes cosmological models, their physical properties and observational tests.

1996 ♦ 104 pp. ♦ Paperback  
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*G Srinivasan*

*Series:* The Present Revolution in Astronomy

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### **Basic Course in Crystallography, A**

*J A K Tareen & T R N Kutty*

Crystallography is a multidisciplinary subject, forming a part of courses in materials science, chemistry, condensed matter physics, metallurgy, ceramics, geology, mineralogy, and some disciplines in engineering. The most important feature of this book is the logical development of the subject, the crucial key word being symmetry in point groups as well as the translational distribution of molecules to

generate the long-range order. A large number of illustrations complement the lucid narration. Worked examples and exercises are included in most chapters.

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Rao, B P C & Sasikala, G (Eds.)*



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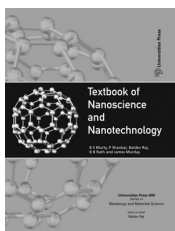
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Anish Upadhyaya & G S Upadhyaya

See page 25

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B S Murty, P Shankar, Baldev Raj, B B Rath,  
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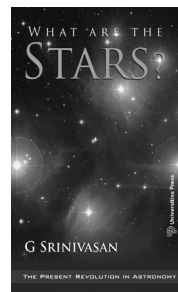
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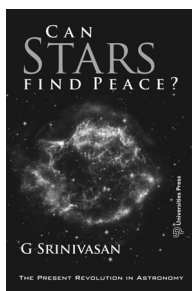
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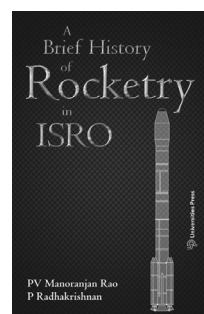


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# CHEMISTRY

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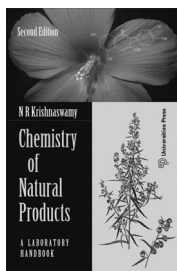
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*N R Krishnaswamy*

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## CHEMISTRY

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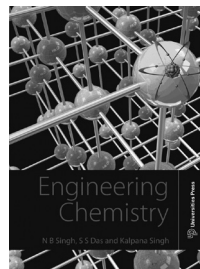
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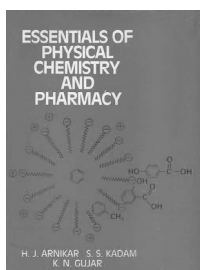
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(Third Edition)

Samir Sarkar

*Fuels and Combustion, Third edition* is a systematic and comprehensive work on a subject that forms an integral part of the undergraduate degree courses in chemical, mechanical, metallurgical and aeronautical engineering. While emphasising the fundamental principles, the book provides a balanced treatment of energy resources, processing of fuels, fundamentals of combustion and combustion appliances. A special feature of the book is that the topics have been dealt with in the Indian context. The third edition of the book has a completely new introduction, layout and design; new statistics have been added to provide up-to-date information.

*Distributed worldwide (except India) by CRC Press LLC, USA, Taylor and Francis Group*

2009 ♦ 400 pp. ♦ Paperback  
978-81-7371-669-0 ♦ ₹ 395.00

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**NEW**

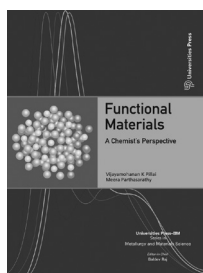

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**Functional Materials: A Chemist's Perspective**

Vijayamohan K Pillai &amp; Meera Parthasarathy



*The Series in Metallurgy and Materials Science* was initiated during the Diamond Jubilee of the Indian Institute of Metals (IIM). In the last decade, the progress in the study and development of

metallurgy and materials science has been rapid and extensive, giving us a whole new array of materials, with a wide range of applications, and a variety of techniques for both processing and characterizing them. With the help of an expert editorial panel of international and national scientists, the series aims to make this information available to a wide spectrum of readers through textbooks, monographs on select topics, and proceedings of select international conferences organised by the IIM. This book is the **eighth book** in the series.

This book introduces the reader to the basic concepts, lines of development, main characteristics and applications of functional materials. Several examples of functional materials developed during the last two decades are used to illustrate their versatility and range of function. This book examines the preparation and characterization of some of these materials from the perspective of a synthetic chemist. Although research in this area is multidisciplinary, the chemistry of these materials is given special importance. Existing and emerging applications of functional materials in energy storage, polymer electronics, chemical sensors, nanobiotechnology and medicine are highlighted.

**Salient Features:** ♦ Selection of topics based on curriculum and current interest ♦ Numerous examples and illustrations ♦ Colour plates to enhance understanding ♦ Further Reading and Exercises at the end of every chapter

*This book lucidly explains various aspects of functional materials, beginning from fundamental definitions to specific applications and methods of introducing functions, emerging synthetic tools and many attendant challenges. The authors admirably unravel the subject's multi-disciplinary breadth and convey their smart understanding of the new innovative trends in the design, synthesis and manufacture of new materials. They elegantly combine various aspects of molecular design, material preparation, organization,*



characterization and applications with many fascinating, real-life examples..

— **R A Mashelkar**

National Research Professor, CSIR  
Bhatnagar Fellow &  
President, Global Research Alliance  
National Chemical Laboratory,  
Pune, India

**Contents:** Foreword ❖ Preface ❖ Acknowledgements  
❖ About the Series ❖ Editorial Advisory Board  
❖ Functional Materials: A Virtual Tour  
❖ Classification of Functional Materials  
❖ Molecular Self-Assembly ❖ Bioinspired Materials  
❖ Smart Materials ❖ Functional Materials for Sustainable Energy ❖ Materials for Polymer Electronics ❖ Functional Nanocomposites ❖ Going Beyond Functional Materials—Future Directions  
❖ List of Colour Plates ♦ *Plate 1* • Fig. 1.1: The Lycurgus Cup, made of ruby glass containing gold and silver nanoparticles • Fig. 3.5: Solution-route synthesis of alkanethiol self-assembled monolayers ♦ *Plate 2* • Fig. 3.13: Polymer building blocks studded with cells self-assemble into complex structures • Fig. 4.3: SEM images of a lotus leaf surface and a lotus-like polymer film ♦ *Plate 3* • Fig. 4.4: A water strider walking on water • Fig. 4.9: Bionic approach to minimize energy loss due to vortex generation at the wing tips of airplanes ♦ *Plate 4* • Fig. 5.3: Demonstration/application of superhydrophobic surfaces • Fig. 5.5: (a) Temporary shape to permanent shape (linear) of a network polymer; (b) Molecular mechanism of thermally induced shape memory effect ♦ *Plate 5* • Fig. 6.1: Photograph of a swarm of fireflies • Fig. 6.3: Storage and yearly changes of carbon content in the atmosphere, hydrosphere and geosphere ♦ *Plate 6* • Fig. 6.10: Cobalt oxide (CO<sub>3</sub>O<sub>4</sub>) nanowires assembled on a polyelectrolyte film • Fig. 7.8: A comparison of the 'luminous efficiency' of inorganic and organic light emitting diodes ♦ *Plate 7* • Fig. 7.12: Polymers based on poly(fluorene) emit light over a wide range of colours • Fig. 8.3: An iridescent abalone shell • Fig. 8.4: A Mayan painting from Mexico made of an organic–inorganic nanocomposite ♦ *Plate 8*

- Fig. 8.6: Rapidly reversible thermochromic behaviour
- Fig. 8.7: Assembly of nanoparticles using PAMAM dendrimers

2012 ♦ 408 pp. ♦ Paperback  
978-81-7371-768-0 ♦ ₹ 525.00

## Fundamentals of Crystal Chemistry

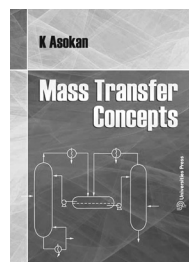
T R N Kutty & J A K Tareen

Crystals have fascinated man from time immemorial due to their brilliant colours and symmetry. Early references to the scientific observation of crystal symmetry date back to Johannes Kepler in 1611, Steno Florence in 1869, etc. Today, a study of two fundamental aspects form the basis for an understanding of the chemistry of crystals—the nature of chemical bonds between atoms and molecules, and the geometry of closely-packed atoms and molecules simplistically assumed to be hard spheres. This monograph is intended to introduce the student of crystallography to the fundamental principles of crystal chemistry.

2000 ♦ 56 pp. ♦ Paperback  
978-81-7371-297-5 ♦ ₹ 150.00

## Mass Transfer Concepts

K Asokan



- Each chapter starts with an introduction
- Various operations and their fundamental principles are explained

- Text is complemented by 153 worked examples
- 169 exercise problems are provided with solutions

Mass transfer involves the use of various operations to separate a mixture into its individual components—a frequent requirement in chemical industries. The differences in the physical properties of the components to be separated – such as the vapour pressure, solubility or diffusivity – are utilised to transfer material from one homogenous phase to another. Techniques such as gas absorption, distillation, leaching, extraction, crystallisation, humidification, drying, adsorption and membrane based separation processes involve mass transfer and can be carried out due to the existence of a concentration gradient within the system.

*Mass Transfer Concepts* equips an engineer with knowledge of all these operations.

**Contents:** Diffusion ❖ Interphase Mass Transfer ❖ Gas Absorption ❖ Distillation ❖ Leaching and Extraction ❖ Crystallisation ❖ Humidification ❖ Drying ❖ Adsorption ❖ Other Separation Processes ❖ Answers to Problems

**2011 ♦ 428pp. ♦ Paperback**  
**978-81-7371-727-7 ♦ ₹ 450.00**

## Simple Approach to Group Theory in Chemistry, A

*S Swarnalakshmi, T Saroja, & R M Ezhilarasi*

The book explains the basics of group theory, what symmetry elements and operations are, how to identify point groups, the theorems involved, the applications of group theory to spectroscopy.

The numerous worked-out examples and illustrations of symmetry elements and operations guide the reader in a step-wise

manner through the subject. Even those without a background in mathematics will find this approach easy and helpful.

The book is based on the prescribed syllabus for M Sc Chemistry and can be used by students across India as a textbook. It can be used as a reference book by B Sc Chemistry students.

**2008 ♦ 156 pp. ♦ Paperback**  
**978-81-7371-623-2 ♦ ₹ 250.00**

## Story of Chemistry, The

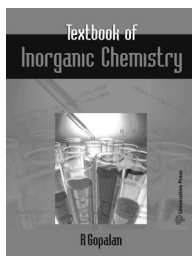
*N C Datta*

Chemistry touches every aspect of our life, but we are largely ignorant of it. A general reader has access to many popular books in the various areas of physics and astronomy, but in the area of chemistry there is virtually no accessible material. One common perception is that chemistry is a difficult subject, which is partially true. In science, a reader grasps the subject better and becomes interested, if it deals with easily identifiable objects and theories. This is not the case with chemistry. Atoms and molecules are not seen, whereas stars, planets and rockets can be seen by the naked eye and evoke wonder in our mind.

This book is an attempt to trace the development of chemistry from ancient times to the present, particularly up to the development of chemical bonding, which is the essence of chemistry. Throughout the book, the lives of the scientists and the social climate in which they worked have occupied a dominant position to evoke the drama and excitement of different discoveries.

**2005 ♦ 488 pp. ♦ Paperback**  
**978-81-7371-530-3 ♦ ₹ 595.00**



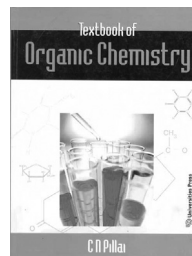
**Textbook of Inorganic Chemistry***R Gopalan*

*Inorganic Chemistry for Undergraduates* conforms to the syllabus of the B.Sc Chemistry courses of Indian universities. This book not only fulfils the requirements of the syllabus but also caters to the students who would like to delve deeper into the subject. It convinces the student that there is more to inorganic chemistry than equations! This book will serve as a handy tool for teachers to plan their lectures.

**Special Features:** Objectives are listed to give an overview of the chapter ♦ Involves a systematic and interesting approach ♦ Several worked out problems are provided ♦ 'Boxed' matter on popular aspects are presented ♦ Exhaustive question bank is provided at the end of each chapter.

**Contents:** Atomic structure ❖ Periodicity of properties ❖ Principles of inorganic qualitative analysis ❖ Principles of volumetric analysis ❖ Solvents for inorganic reactions ❖ Ionic bond ❖ Covalent bond: VB theory ❖ Covalent bond: Molecular orbital theory ❖ Hydrogen ❖ Alkali metals ❖ Alkaline earth metals ❖ Boron family ❖ Carbon family ❖ Nitrogen family ❖ Oxygen family ❖ Halogens ❖ Noble gases ❖ Principles of metallurgy ❖ Transition elements: Introduction ❖ Chemistry of transition elements ❖ Inner transition elements ❖ Coordination compounds ❖ Bioinorganic chemistry ❖ Nuclear Chemistry ❖ Industrial inorganic chemistry ❖ Environmental chemistry ❖ Supplementary reading ❖ Index

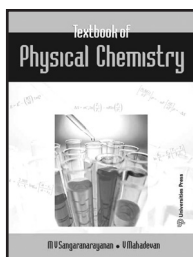
**2011 ♦ 960 pp. ♦ Paperback**  
**978-81-7371-752-9 ♦ ₹ 495.00**

**Textbook of Organic Chemistry***C N Pillai*

*Text Book of Organic Chemistry* is meant for students who learn organic chemistry at the undergraduate level and who have already had exposure to the basics of chemistry, including an introduction to organic chemistry. This book conforms to the syllabus of Indian universities at the undergraduate level, but can be useful to students at a more advanced level also.

The book has a deductive approach and reduces the need to learn by rote. The objectives are listed at the beginning of every chapter which gives the student an overview of the chapter. Each chapter has been structured in a logical and interesting manner that facilitates easy reading and understanding. This approach has been developed and perfected by the author over the course of his tenure as a teacher of organic chemistry. At the end of each chapter, exercises are provided which strengthen the students' understanding of the concepts discussed in the text. 'Challenging Questions' are given for those students who want to delve deeper into the subject. Topics of current interest that are related to the subject matter of the chapter are suggested for preparing project reports.

**2009 ♦ 640 pp. ♦ Paperback**  
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**Textbook of Physical Chemistry***M V Sangaranarayanan & V Mahadevan*

*Textbook of Physical Chemistry*, together with the companion books on organic chemistry and inorganic chemistry, meets the complete requirements of undergraduate students of chemistry across India. In a book comprising all the classical topics which span physical chemistry including chemical kinetics, electrochemistry and thermodynamics among others, uniformity in the depth of coverage of each topic is not easy to attain in view of the disjointed pace of growth of each discipline. Nevertheless, care has been taken to ensure that the material in this book will sustain the interest of students and motivate them to learn physical chemistry.

In order to aid students, every chapter contains the Objectives at the beginning and Key Points at the end. Various aspects of physical chemistry are dealt with in a lucid manner and interesting related matter is highlighted in boxes. The derivations are given in a comprehensible manner. Since physical chemistry involves numericals, several worked examples complement the text. The exercises at the end of each chapter, in particular, will be extremely valuable to sharpen the problem-solving skills and direct the student towards appreciating the nuances of physical chemistry.

**Special Features:** ♦ Objectives are listed to give an overview of the chapter ♦ Chapters are developed in a logical and interesting manner ♦ Derivations are kept simple ♦ Interesting matter is highlighted in grey boxes ♦ Numerous worked out examples complement the text ♦ Exercises at the end of each chapter to

sharpen the problem-solving skills ♦ Key points at the end of each chapter to aid revision

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**2011 ♦ 592 pp. ♦ Paperback**

**978-81-7371-726-0 ♦ ₹ 415.00**

**Understanding Chemistry***C N R Rao*

This supplementary book and multimedia package for students from senior school and first year B.Sc. is intended to bring out the excitement of chemistry and encourage more students to pursue this subject further. It explains the Hows and Whys of chemistry to whet the appetite of a good student.

**1999 ♦ 252 pp. ♦ Paperback**

**978-81-7371-250-0 ♦ ₹ 325.00**

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SERIES IN METALLURGY AND  
MATERIALS SCIENCE**

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The series in Metallurgy and Materials Science has been initiated during the Diamond Jubilee of the Indian Institute of Metals (IIM). In the last decade the progress in the study and development of metallurgy and materials science has been rapid and extensive, giving us a whole new array of materials, with a wide range of applications, and a variety of techniques for both processing and characterizing them. With the help of an expert editorial panel of international and national scientists, the series aims to make this information

available to a wide spectrum of readers through textbooks, monographs on select topics by experts in the field, and proceedings of select international conferences organized by the IIM.

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### Advances in Manufacturing Technology

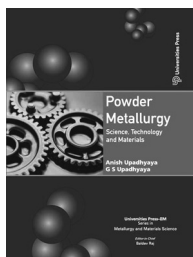
*Raj, Baldev, Jayakumar, T, Sivaprasad, P V,  
Rao, B P C & Sasikala, G (Eds.)*

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### Powder Metallurgy: Science, Technology and Materials

*Anish Upadhyaya & G S Upadhyaya*



The Series in Metallurgy and Materials Science was initiated during the Diamond Jubilee of the Indian Institute of Metals (IIM). In the last decade the progress in the study and development of metallurgy and materials science has been rapid and extensive, giving us a whole new array of materials, with a wide range of applications, and a variety of techniques for both processing and characterising them. This book is the first textbook in the series.

Since the 1920s modern powder metallurgy has been used to produce a wide range of structural Powder Metallurgy (PM) components, self-lubricating bearings and cutting tools. The conventional method involves the production of metal powders, and manufacture of useful objects from such powders by die compaction and sintering. Wrought products are also produced by this route. Powder injection moulding permits

the production of stronger, more uniform and more complex PM parts. A detailed discussion of PM materials and products is given in the book.

**Special Features:** Sintering has been elaborated in two chapters—Sintering theory and Sintering technology ♦ Testing and Quality Control of PM Materials and Products, is not found in many PM books ♦ Techno-economics of PM processing are also described in detail ♦ Powder metallurgical aspects of both metallic and ceramic systems are treated equally ♦ Materials handling at various stages of processing ♦ Pressureless powder shaping ♦ Functionally graded materials • Powder Metallurgy material code ♦ New approach-Pyrophoricity and toxicity in Chapter 3-Nanostructured materials and the electronic theory of sintering in chapter 7 ♦ For powder metallurgical engineers-Variou kinds of actual testing and quality control methods in Chapter 11-ceramics materials in Chapter 12-Wide range of practically applied parts in Chapter 13

**Contents:** **Chapter 1:** Introduction ❖ **Chapter 2:** Powder Production ❖ **Chapter 3:** Powder Characterisation ❖ **Chapter 4:** Powder Treatment ❖ **Chapter 5:** Powder Compaction ❖ **Chapter 6:** Pressureless Powder Shaping ❖ **Chapter 7:** Sintering Theory ❖ **Chapter 8:** Sintering Technology ❖ **Chapter 9:** Full Density Consolidation ❖ **Chapter 10:** Secondary Treatments ❖ **Chapter 11:** Testing and Quality Control of P/M Materials and Products ❖ **Chapter 12:** Metallic and Ceramic P/M Materials ❖ **Chapter 13:** P/M Applications ❖ **Chapter 14:** Techno-economics of P/M Processing

**2011 ♦ 536 pp. ♦ Paperback**  
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### Textbook of Nanoscience and Nanotechnology

*B S Murty, P Shankar, Baldev Raj, B B Rath &  
James Murday*

See page 11  
.....

## 100 Writing Remedies: Practical Exercises for Technical Writing

*Edmond H Weiss*

This book presents thought-provoking examples designed to challenge your ability to recognise grammatical errors or style problems and actually “debug” faulty sentences. Designed for those who aren’t professional writers but for whom writing is a necessary part of the job—technical professionals, scientists, engineers, and others.

1999 ♦ 112 pp. ♦ Paperback  
978-81-7371-266-1 ♦ ₹ 295.00

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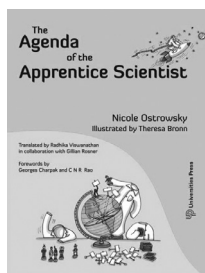
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## Agenda for Apprentice Scientist, The

*Nicole Ostrowsky*



Here are 365 activities to discover that science is a part of our daily life, that you can take part in it with pleasure, that it can be easy, sometimes surprising and funny, and always accessible to everyone, from 7 to 107. All you need to have is a curiosity about the world around you.

Throw yourself into this adventure across the sciences, go at your own pace, follow your fancy and don’t necessarily stick to the days of the year. Keep in mind, however, that some activities take place over a couple of days—you will see

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this as you go. Set your imagination free, do or redo the experiments as you wish, and try and invent better ways to make them work. If you have problems, if you need a clearer explanation, or if you want to share your ideas, you can write to [Nicole.Ostrowsky@unice.fr](mailto:Nicole.Ostrowsky@unice.fr) or visit <http://apprenticescientist.com>

But most importantly, don’t hesitate to play, draw, cut, construct, write and think—there is no better way to learn than through this maxim:

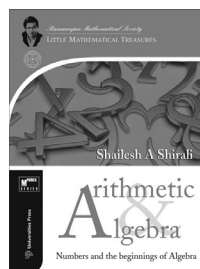
Tell me and I’ll forget,  
Show me and I may remember,  
Involve me and I’ll understand.

2012 ♦ 396 pp. ♦ Paperback  
978-81-7371-753-6 ♦ ₹ 495.00

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## Arithmetic and Algebra: Numbers and the beginnings of Algebra

*Shailesh A Shirali*



*Arithmetic and Algebra: Numbers and the beginnings of Algebra* is written for students of mathematics in classes 7 to 10. It can be used by middle school and high school mathematics teachers who wish to take their students to a deeper level of the subject; it can also be studied by those who have a general interest in the subject. With the help of revealing examples and exercises, the book aims to help students journey into a world of pattern, power and beauty—a journey which can enrich their life greatly.

This is the first book in the MPOWER series of books on arithmetic, algebra and geometry and is included in the Ramanujan Mathematical Series: Little Mathematical Treasures.

**Contents:** The World of Numbers ❖ Beginnings of Algebra ❖ Families of Integers ❖ Fractions, Decimals and Percentages ❖ Fractions: Special Topics ❖ Ratio and Proportion ❖ Indices and Exponents ❖ Polynomials ❖ Expansions in Algebra ❖ Factorisation of Polynomials ❖ Linear Equations ❖ Problem Corner ❖ Investigations ❖ Answers to Exercises ❖ Index

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### Can Stars Find Peace?

*G Srinivasan*

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### Creative Problem Solver's Toolbox, The

*Richard Fobes*

This book describes more than sixty-five learnable thinking skills that create innovations or creatively solve problems of any kind. More than two hundred examples illustrate how to apply these skills to real-life situations. Behind-

the-scene stories about well-known innovations such as the typewriter and basketball are included. Examples cover a wide variety of situations including solving business problems, raising children, improving relationships, looking for employment, inventing, and solving global problems.

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### Dynamic Himalaya

*KS Valdiya*

This monograph aims to apprise readers of the natural events that occurred and the processes that were in operation before the emergence of the giant edifice of the Himalaya. Helping to achieve clearer understanding of the structural architecture or makeup, the book purports to highlight the mechanisms and the stages of development of the world's youngest mountain province. The text is supplemented with exhaustive data, maps, figures and colour photographs.

**1998 ♦ 196 pp. ♦ Paperback**  
**978-81-7371-094-0 ♦ ₹ 375.00**

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*Eli Maor*

The interest earned on a bank account, the arrangement of seeds in a sunflower, and the shape of the Gateway Arch in St. Louis are all intimately connected with the mysterious number  $e$ . In this informal and engaging history, Eli Maor portrays the curious characters and the elegant mathematics that lie behind the number.

**1999 ♦ 240 pp. ♦ Paperback**  
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**Elements of Cosmology***Jayant V Narlikar*

This book is based on lectures given by the author at a number of universities with the aim of introducing Cosmology to students and teachers at the graduate level. Here, cosmology is explained within the framework of Newtonian gravity and mechanics thereby making it readily understandable to students of Physics and Mathematics at the undergraduate level. The description is up-to-date and includes cosmological models, their physical properties and observational tests.

**1996 ♦ 104 pp. ♦ Paperback**  
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**Encyclopaedia of Classical Indian Sciences***Helaine Selin & Roddam Narasimha*

India's contributions to science and technology are among the most ancient and influential in the world. In mathematics, the decimal place value system with zero as a numeral, used universally today, owes its origin to India. The science of Ayurveda, which has been practised for millennia in India, is now gaining wider acceptance even as many ancient remedies are turned into modern drugs. Indian astronomical computations, ritual geometry, brick technology and metallurgical innovations have been among the finest achievements in the world of science and technology.

*Encyclopaedia of Classical Indian Sciences* is an attempt to provide an authentic account of natural science, technology and medicine as practised by Indians and other South Asians. It also includes biographical articles on many ancient Indian scientists, and some articles (polemic in nature) on the history of Indian science and technology, such as the essay on the effects

of colonialism. All articles are contributions of acknowledged authorities on their subject drawn from across the world.

**2007 ♦ 492 pp. ♦ Hardback**  
**978-81-7371-555-6 ♦ ₹ 1025.00**

**Excursions into Mathematics: The Millennium Edition***Anatole Beck, Michael N Bleicher & Donald W Crowe*

Taking the reader for short "excursions" into several specific disciplines of mathematics, it makes mathematical concepts accessible to a wide audience. The all-new Millennium Edition is updated with current research and new solutions to outstanding problems that have been discovered since the last edition was printed, such as the solution to the well-known "four-colour problem." *Excursions Into Mathematics: The Millennium Edition* is an exciting revision of the original, much-loved classic. Everyone with an interest in mathematics should read this book.

**2003 ♦ 528 pp. ♦ Paperback**  
**978-81-7371-441-2 ♦ ₹ 525.00**

**Explorations in Mathematics***A A Hattangadi*

The book deals with mathematical concepts from high school onwards. It discusses Pythagoras' theorem, logarithms, prime numbers, Pi, Fibonacci sequence and its variations, how to multiply extremely large integers, the Gregorian calendar, how a PC can be programmed using BASIC, number systems such as decimal, binary, octal and hexadecimal systems, and finally how string variables in the BASIC language can convert figures (in a cheque, for example) into words.

**2001 ♦ 240 pp. ♦ Paperback**  
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**Fast Science Facts***Surendra Verma*

This book is a unique collection of basic science facts, concepts and ideas presented in an easy-to-use format. It incorporates the best features of science dictionaries, encyclopedias, handbooks, data books and textbooks.

**1998 ♦ 248 pp. ♦ Paperback**  
**978-81-7371-092-6 ♦ ₹ 295.00**

**From Clockwork to Crapshot: A History of Physics***Roger G Newton*

The book provides the perspective needed to understand contemporary developments in physics in relation to philosophical traditions as far back as ancient Greece.

Roger G Newton presents a history of physics from the early beginning to our day—with the associated mathematics, astronomy, and chemistry. Along the way, he gives brief explanations of the scientific concepts at issue, biographical thumbnail sketches of the protagonists, and descriptions of the new instruments that enabled scientists to make their discoveries. He traces a profound transformation from a deterministic explanation of the world—accepted at least since the time of the ancient Greek and Taoist Chinese civilizations—to the notion of probability, enshrined as the very basis of science with the quantum evolution at the beginning of the twentieth century. This brought about a fundamental shift in the focus of physicists—from dynamics or motion to the underlying architecture of the universe. Their new goal—to explain being rather than change—may well be the defining characteristic of physics in the twenty-first century.

**2008 ♦ 352 pp. ♦ Paperback**  
**978-81-7371-625-6 ♦ ₹ 395.00**

**Fun and Fundamentals of Mathematics***Jayanth V Narlikar & Mangala Narlikar*

This book introduces fundamental ideas in mathematics through interesting puzzles. Students, from age 12 upwards, who are bored with routine classwork in maths will enjoy these puzzles which will sharpen their logical reasoning. It is designed to arouse an interest in mathematics among readers in the 12–18 age group.

**2001 ♦ 200 pp. ♦ Paperback**  
**978-81-7371-398-9 ♦ ₹ 275.00**

**How to Enjoy Calculus***Eli S Pine*

This book is an essential primer for anyone who wants to familiarise himself or herself with calculus. Unlike other books on this subject, it is easy for anyone from any discipline to understand it. For too long this subject has been rendered mysterious and obscure.

With this book, calculus is demystified and can be easily grasped. This book also acts as a stepping-stone and enables you to go on to read other books on calculus with ease.

**2002 ♦ 136 pp. ♦ Paperback**  
**978-81-7371-406-1 ♦ ₹ 195.00**

**Imaginary Tale, An: The Story of  $\sqrt{-1}$** *Paul J Nahin*

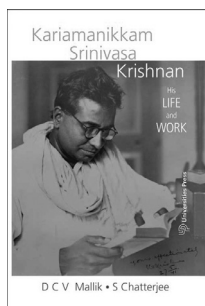
The author tells the 2000-year old history of one of mathematics' most elusive numbers, the square root of minus one, also known as  $i$ , recreating the baffling mathematical problems that conjured it up and the colourful characters who tried to solve them. Addressing readers with both a general and scholarly interest in mathematics, Nahin weaves into this narrative, entertaining historical facts, mathematical

discussions, and the application of complex numbers and functions to important problems.

**2001 ♦ 280 pp. ♦ Paperback**  
**978-81-7371-399-6 ♦ ₹ 375.00**

### **Kariamanikkam Srinivasa Krishnan: His Life and Work**

D C V Mallik & S Chatterjee



The first four decades of the 20th century were glorious years for science, especially physics. Our view of the physical world changed forever with the emergence of quantum mechanics and Einstein's formulation of the theory of relativity. India too contributed significantly to this scientific revolution with the discoveries made by S N Bose, C V Raman and M N Saha, all in the space of about a decade. Kariamanikkam Srinivasa Krishnan (1898–1961) belonged to the same illustrious group. He was perhaps the only Indian physicist of his generation who was equally adept in theory and experiment. Besides a life of excellence in science, Krishnan's destiny led him to become an able science policy maker and administrator; innately he was a great teacher, a humanist and a scholar of Sanskrit, Tamil literature and philosophy.

This biography, besides being a detailed and meticulously documented account of Krishnan's life and his scientific work, is also an exciting account of the history of Indian science of the period. The source material of this work, most of which are being used for the first time, comes from the private papers of

K S Krishnan that had remained in the custody of his family.

**Contents:** *Foreword ♦ Acknowledgement ♦ Prologue ♦ Background ♦ Childhood and Schooling ♦ College Years ♦ Science Education and Its Beginnings in Calcutta ♦ Calcutta ♦ Scattering of Light ♦ Discovery of the Raman Effect ♦ Dacca ♦ Bonds of Magnetism I: The Dacca Phase ♦ Winds of Change ♦ Bonds of Magnetism II: The Calcutta Phase ♦ Graphite and Its anomalous Diamagnetism ♦ Honours and Offers ♦ The Physics Chair at Allahabad ♦ Rejuvenating Physics in Allahabad ♦ The Widening Vista ♦ Krishnan in Delhi ♦ NPL: The Initial Years ♦ Oscillating Lattices, Emitting Surfaces, Heated Tubes ♦ The Broader Stage ♦ Into the Twilight*

*Appendix:* ♦ Raman Scattering ♦ Diamagnetic and Paramagnetic Susceptibilities ♦ Formulae for Electrical Resistivity of Metals ♦ *Primary Sources ♦ Bibliography ♦ Index*

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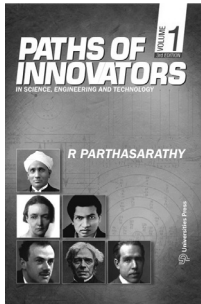
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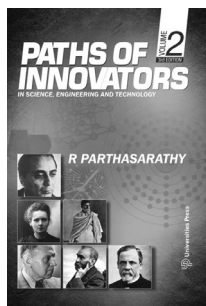
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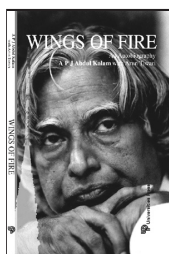
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*A P J Abdul Kalam with Arun Tiwari*

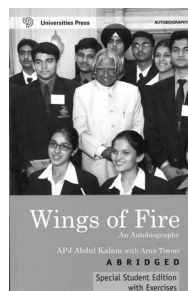


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**978-81-7371-010-0 ♦ ₹ 195.00**

**Many Phases of Matter, The**

This book is about phase transitions. It seeks to unfold the universal connecting link between diverse physical phenomena, all involving a change of state.

**1991 ♦ 104 pp. ♦ Paperback**  
**978-81-7371-034-6 ♦ ₹ 195.00**

**Quantum Revolution I—The Breakthrough**

The discovery of quantum mechanics is often hailed as the greatest revolution in human thought. This volume, the first of three, seeks to capture the drama of this supreme achievement.

**1993 ♦ 200 pp. ♦ Paperback**  
**978-81-7371-002-5 ♦ ₹ 195.00**

**Quantum Revolution II—QED: The Jewel of Physics**

This volume describes how the battle of infinities was fought and, more importantly, about a new approach to quantum mechanics. It deals with the birth of quantum electrodynamics, a theory of incredible and unmatched precision and the most perfect physical theory known to man.

**1993 ♦ 144 pp. ♦ Paperback**  
**978-81-7371-003-2 ♦ ₹ 195.00**

**Quantum Revolution III—What is Reality?**

This concluding part of the trilogy on quantum mechanics deals with the fascinating question: Is there really a world out there or does it exist because we see it?

**1993 ♦ 140 pp. ♦ Paperback**  
**978-81-7371-004-9 ♦ ₹ 195.00**

**Raman and His Effect**

This book deals with the famous Scattering Effect discovered by Sir C.V. Raman. It gives us deep insights into the character of this famous scientist and vividly describes the circumstances surrounding the discovery.

**1995 ♦ 108 pp. ♦ Paperback**  
**978-81-7371-008-7 ♦ ₹ 195.00**

**Saha and His Formula**

A great leap forward in unravelling the mysteries of the Sun occurred way back in 1920 when Meghnad Saha made an important discovery that paved the way for a systematic study of stellar atmospheres in general. This book is about that great discovery and the man who made it.

**1995 ♦ 206 pp. ♦ Paperback**  
**978-81-7371-017-9 ♦ ₹ 195.00**

**Why are Things the Way They Are?**

This book uses basic calculations to help the student answer questions such as, 'Why is the size of an atom roughly 10<sup>-8</sup> cm and not 1 cm?' or 'Why is the height of Mount Everest 10 km and not 100 km?' In short, 'Why are things the way they are?' This book is an introduction to some methods of making rapid estimates, and shows how estimated answers can be made in just a few steps.

**1992 ♦ 120 pp. ♦ Paperback**  
**978-81-7371-033-9 ♦ ₹ 195.00**

# BIODIVERSITY

## AGRICULTURE AND FORESTRY

### Cultivation of Medicinal and Aromatic Crops (Revised Edition)

*A A Farooqi & B S Sreeramu*

In recent years, there has been a tremendous growth of interest in plant-based drugs, pharmaceuticals, perfumery products, cosmetics and aromatic compounds used in food flavours, fragrances, and natural colours. An attempt has been made in this book to provide all possible pooled information including the research findings that have been generated by the Division of Horticultural Sciences, the University of Agricultural Sciences, the Indian Institute of Horticultural Research, the Central Institute of Medicinal and Aromatic Crops, the National Botanical Research Institute, the Regional Research Laboratories, ICAR, and others.

**2004 ♦ 344 pp. ♦ Paperback**  
**978-81-7371-504-4 ♦ ₹ 995.00**

### Cultivation of Spice Crops

*A A Farooqi, B S Sreeramu & K N Srinivasappa*

Spices constitute an important group of agricultural commodities, which, since antiquity, have been used for flavouring foods. Some species are used in the pharmaceutical, perfumery, cosmetics and related industries, and others possess colourant, preservative, antioxidant, antiseptic and antibiotic properties.

This book reflects the intensive research carried out on this group of 42 spice crops since 1971, the improvement in agro-techniques and the release of many high-yielding varieties. It provides exhaustive information on all aspects of cultivation, harvesting and processing of each crop and will be an invaluable aid to students,

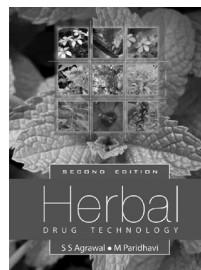
teachers and growers of spice crops, both individual and corporate.

**2005 ♦ 468 pp. ♦ Paperback**  
**978-81-7371-521-1 ♦ ₹ 525.00**

## NEW

### Herbal Drug Technology Second Edition

*S S Agrawal & M Paridhavi*



The revised edition of Herbal Drug Technology is based on the curriculum of various universities, both bachelor's and master's courses in pharmacy and allied sciences, conducted globally. It contains detailed information on Indian systems of medicine, herbal therapeutics, crude drugs and medicinal botany – plant taxonomy, morphological considerations of crude drugs and fundamental considerations of histology. The book discusses the in vitro culture of medicinal plants, nutritional requirements and processing techniques, and establishes guidelines for setting up an in vitro culture laboratory. It explains in detail the systematic examination of crude drugs, their extraction, isolation and analysis using various modern techniques like TLC, PC, HPLC, HPTLC, GLC, UV, IR, NMR, MS, GC-MS, DSC and Sepbox. New topics such as herbal cosmetics, nutraceuticals, chemotaxonomy, methods of literature search and patenting of herbal drugs, recent changes in in vivo anticancer screening

Prices are subject to change without notice

models and screening of cardiac glycosides have been added in the present edition. The book contains discussions on screening of herbal drugs for pharmacological activity with regard to anti-fertility, anti-diabetic, anti-cancer, anti-anginal, anti-thyroid and many other conditions.

**Special Features:** ♦ Designed according to the curriculum of undergraduate and postgraduate courses in pharmacy of various universities in India and abroad. ♦ Incorporates all recent scientific innovations and advances in a simple, lucid style. ♦ A comparative study has been made between dosage forms in ayurveda and modern medicine. ♦ Includes a detailed analysis of more than 60 phytopharmaceuticals.

**Contents:** Foreword ❖ Preface to the Second Edition ❖ Preface to the First Edition ❖ Introduction to Medicinal Plants ❖ Indian Systems of Medicine ❖ Herbal Therapeutics: From Ancient Times to the 21st Century ❖ Essentials of Crude Drugs ❖ Medicinal Botany ❖ In vitro Culture of Medicinal Plants: Tissue Culture ❖ Systematic Examination of Powdered Drugs ❖ Application of Chromatography and Spectroscopy in Plant Drug Analysis ❖ Extraction, Isolation and Analysis of Phytopharmaceuticals ❖ Screening Methods Used for Herbal Drugs ❖ Standardisation of Herbal Drugs ❖ Herbal Formulations: A Comparative Study of Ayurvedic and Modern Dosage Forms ❖ Herbal Cosmetics ❖ Nutraceuticals: A Modern Approach ❖ Chemotaxonomy ❖ The Role of Literature Search in Medicinal Plant Research ❖ Patenting of Herbal Drugs ❖ Glossary of Botanical Terms ❖ Glossary of Medical Terms ❖ Bibliography ❖ Index

**2012 ♦ 836 pp. ♦ Paperback**  
**978-81-7371-787-1 ♦ ₹ 775.00**

## Herbal Home Remedies

*R Vasudevan Nair*

This book contains information about the use of common plants to cure common ailments based

on knowledge gained from the experience of generations. The suggested treatments are simple, inexpensive and easy to follow. They are recommended only as primary health care measures. The book is beautifully illustrated with line drawings of each plant to facilitate easy identification.

**2004 ♦ 58 pp. ♦ Paperback**  
**978-81-7371-482-5 ♦ ₹ 125.00**

## Indian Medicinal Plants: A Compendium of 500 Species

*P K Warriar, V P K Nambiar & C Ramankutty*

This compendium is based on a treatise prepared by S. Raghunatha Iyer, a scholar of both Sanskrit and Ayurveda and aims to make an authoritative contribution to the field. The original work which drew upon classical texts and current research, as well as the oral medical knowledge of tribal groups, has been updated by scholars associated with the Arya Vaidya Sala in Kottakal, India.

This unique compendium offers profiles of 500 key species with detailed taxonomic information. One of the leading features of this compilation is the special technique used in the illustrations, both colour and line, which aims to achieve authenticity of texture, colour and form.

The compendium also lists the distribution and popular nomenclature in English, Sanskrit, Hindi, Malayalam and Tamil. The main texts present properties and uses in a format which cites ancient verse texts and ethnobotanical sources. This rare work, in five volumes, should be of special interest to practitioners of alternative medicine, students of Ayurveda, the research and industry associated with medical botany, pharmacologists, sociologists and medical herbalists.

**Volume 1**  
1993 • 430 pp. • Hardback  
978-81-7371-702-4 • ₹ 995.00  
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## BIODIVERSITY

### Volume 2

1994 • 436 pp. • Hardback  
978-81-7371-703-1 • ₹ 995.00

### Volume 3

1994 • 423 pp. • Hardback  
978-81-7371-704-8 • ₹ 995.00

### Volume 4

1995 • 444 pp. • Hardback  
978-81-7371-705-5 • ₹ 995.00

### Volume 5

1996 • 592 pp. • Hardback  
978-81-7371-706-2 • ₹ 995.00

## EARTH SCIENCES

### Dynamic Himalaya

*K S Valdiya*

This monograph aims to apprise readers of the natural events that occurred and the processes that were in operation before the emergence of the giant edifice of the Himalaya. Helping to achieve clearer understanding of the structural architecture or makeup, the book purports to highlight the mechanisms and the stages of development of the world's youngest mountain province. The text is supplemented with exhaustive data, maps, figures and colour photographs.

**1998 ♦ 196 pp. ♦ Paperback**  
**978-81-7371-094-0 ♦ ₹ 375.00**

### Geology, Environment and Society

*K S Valdiya*

This book on the applied aspects of environmental geology encapsulates a geologist's concern that people are selling their future to finance their present. It explores subjects of ecosystem structure; soil and mineral resources and their conservation; hydrogeology and water resources management; terrain

evaluation and land-use planning; engineering geology and the application of technology; understanding earth processes and natural hazards, climate change and drought; careful waste disposal methods; and medical geology.

The book addresses the problems of environmental security within the context of geological settings and the geodynamic sensitivity of terrains. It suggests measures to mitigate the adverse consequences of tampering with nature's fine balance. Over 150 detailed and clearly labelled diagrams, photographs, maps and satellite images illustrate these aspects, and are critical to the understanding of these problems.

**2004 ♦ 240 pp. ♦ Paperback**  
**978-81-7371-505-1 ♦ ₹ 350.00**

## ENVIRONMENTAL MANAGEMENT

### Corporate Environmental Management

*Richard Welford*

This book presents a comprehensive analysis of the role of business in safeguarding the environment. It gives a detailed, critical examination of all the key tools of corporate environmental management, including environmental management systems and standards; environmental policies, guidelines and charters; environmental auditing; life-cycle assessment; the measurement of environmental performance; and environmental reporting. The book emphasises systems based environmental management, and also considers how such an approach might be integrated within local authorities and small- and medium-sized companies. It then extends the systems approach to cover continuous environmental improvement, building a corporate environmental profile and moving towards sustainability.

**1999 ♦ 280 pp. ♦ Paperback**  
**978-81-7371-157-2 ♦ ₹ 475.00**

## NATURAL HISTORY

**Birds in Our Lives***Ashish Kothari*

*Birds in Our Lives* provides glimpses of the incredible diversity of India's birds, the ecosystems where different kinds of birds are found, and the various ways, cultural and economic, in which birds have touched our lives. It gives a brief account of the history of ornithology in India. It stresses on the serious threats that bird habitats and populations face, and gives a sense of both the continued erosion of Indian birdlife, as well as the rapidly growing efforts to save it. Finally, it provides key pointers for what needs to be done if we want to save this precious natural heritage.

**Special Features:** ♦ An extremely readable and technically accurate account of bird conservation in India ♦ Written by one of India's most well-known and outspoken conservationists Printed on art paper, with over 100 colour photographs

**2007 ♦ 308 pp. ♦ Paperback**

**978-81-7371-586-0 ♦ ₹ 675.00**

**Birds: Beyond Watching***Abdul Jamil Urfi*

Birdwatching is reckoned to be an important tool for initiating the process of inquiry into the natural world. Birds are colourful, full of movement and diurnal. They capture the popular imagination well and are also important symbols of the conservation movement. In today's context, with natural habitats coming under increasing threat, there is a greater need for biodiversity monitoring, bringing about greater awareness for environmental concerns and action. In this regard, amateur birdwatchers are an important target group as they have a role to play, not only in the dissemination of information, but also in assisting professional conservationists in gathering data on bird distributions and abundance.

Clearly, there is also a need for a book which takes amateur birdwatchers beyond simply watching birds and treating them merely as objects of identification, much in the same way as a stamp collector does with his or her stamp collection. This book should acquaint birdwatchers, nature lovers, students of biodiversity (especially those from a non-zoology background but also those from a zoology background) with ecology, conservation issues, bird study principles, and above all the methods of observing and recording. This book is a departure from conventional books as it is written in a light, easy-to-read style, peppered with anecdotes.

**2004 ♦ 240 pp. ♦ Paperback**

**978-81-7371-485-6 ♦ ₹ 350.00**

**Conservation Biology: A Primer for South Asia***Kamaljit S Bawa, Richard B Primack & Meera Anna Oommen*

This introductory book on conservation biology is based on Richard Primack's widely used *A Primer of Conservation Biology*. It explores the key concepts of conservation using examples from South Asia, home to some of the world's most exotic species that are now facing the threat of extinction. The book draws attention to the rapid decline in the biodiversity of this region and emphasises the need for urgent action. It also discusses the initiatives that are being undertaken in the region such as involving local communities, framing laws and policies, and identifying research areas that will help stem

## BIODIVERSITY

further loss in biodiversity and make the long term goal of protecting our species successful.

**Special Features:** Numerous case studies from South Asia ♦ Discusses the involvement of indigenous tribes in preserving biodiversity ♦ Outlines specific research areas that are to be focussed on for implementation of successful conservation programmes

**2011 ♦ 604 pp. ♦ Paperback**  
**978-81-7371-724-6 ♦ ₹ 625.00**

### **Field Days: A Naturalist's Journey through South and Southeast Asia**

*A J T Johnsingh*

Each of the thirty-seven articles in this book is a journey into a protected forest, some well-known and others rarely accessed. Nearly always, a long walk is involved, a walk that picks up details that an untrained eye would easily miss. Close encounters with temperamental tuskers, protective elephant mothers, reclusive tigers, poachers, villagers, tribal communities and forest guards pepper these walks. Dr Johnsingh's analyses include his deep concern for the tremendous challenge ahead if these places and their inhabitants are to be conserved in the face of an alarming onrush of humanity. Each journey, finally, involves a thoroughly enjoyable understanding of the protected area, its history, people, plants and wildlife.

**2005 ♦ 256 pp. ♦ Paperback**  
**978-81-7371-552-5 ♦ ₹ 450.00**

### **M Krishnan: Eye in the Jungle—Photographs and Writings**

*Ashish Chandola, Shanthi Chandola & T N A Perumal*

M. Krishnan (1912–1996) was endowed with a wide range of interests and amazing prowess as a writer in both his native Tamil and English. He wrote on anything that caught his attention, from dog-shows to cricket, local breeds of cattle

to temple carvings, squirrels in his backyard to elephants, gaur and mouse deer of the forests. He did not just write occasionally, but wrote steadily and inspiringly for well over 35 years.

A pioneer in the field of black & white photography, Krishnan's contribution to wildlife photography and writing on natural history in India has no parallel. In this special compilation, an effort has been made to select lively and anecdotal text for which Krishnan has been recognised, to accompany images that he created which are in a class of their own.

**2005 ♦ 128 pp. ♦ Hardback**  
**978-81-7371-554-9 ♦ ₹ 1500.00**

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## NEW

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### **Mammals of South Asia (Volume 1)**

*A J T Johnsingh & Nima Manjrekar (Eds.)*



A milestone in the natural history of the subcontinent—an indispensable, detailed source of information and value to everyone interested in mammals, whether layperson or scientist.

With rigour and objectivity, the two volumes cover all 574 species in the region, many of them in detail and depth, based on consummate research conducted during the past half-century.

This reflects a genuine increase in knowledge since the 1960s, when many species – from slender loris to elephant – were, for the first time, studied in the wild by trained biologists, with patience and respect, to create intimate and enduring portraits of other beings.

— **George B Schaller**  
in his Foreword



**Contents:** Preface ❖ Acknowledgements  
 ❖ Foreword by George B Schaller ❖ Introduction  
 ❖ **Order: Insectivora** ❖ **Order: Primates**  
 ❖ Family: Lorisidae ❖ Family: Cercopithecidae  
 ❖ Family: Hylobatidae ❖ **Order: Carnivora**  
 ❖ Family: Canidae ❖ Family: Ursidae ❖ Family:  
 Procyonidae ❖ Family: Herpestids, Viverrids &  
 Mustelids ❖ Family: Hyaenidae ❖ Family: Felidae  
 ❖ List of contributors ❖ Species index

**2012 ♦ 766 pp. ♦ Paperback**  
**978-81-7371-590-7 ♦ ₹ 1750.00**

## Marine Mammals of India

*Kumaran Sathasivam*

The intelligent dolphins, the giant whales and the inoffensive dugong or sea-cow are among the most fascinating creatures in the wild. Every aspect of their way of life is astonishing—some of them use sound to “see” in the water, some of them dive to incredible depths in search of food, and some of them sing complex songs. Marine mammals are so intriguing that worldwide there is a multi-million dollar industry in just watching these animals. Yet, in India, few are even aware that there are many of these creatures in the seas around the country—a full fourth of the world’s 120 or so species, in fact. This is due to the lack of information about them. Most existing records are scattered in various scientific journals. No book published so far covers this group of Indian wildlife adequately.

This book is meant for a wide range of readers including children, wildlife enthusiasts and serious students. A significant part of the book is devoted to the more than 30 species accounts, which make the book a useful reference. Glimpses of their lifestyles are given through several essays dealing, for example, with the phenomenon of mass strandings of whales or the reputed ferocity of the killer whale. Further, colour illustrations and character matrices meant for easy identification make this book a

useful field guide. The extensive bibliography makes the book a valuable research aid. The accounts of whaling and other threats faced by marine mammals highlight the conservation requirements of these animals.

**2003 ♦ 228 pp. ♦ Paperback**  
**978-81-7371-465-8 ♦ ₹ 495.00**

## Science of Saving Tigers, The

*K Ullas Karanth*

The Science of Saving Tigers puts together twenty significant articles on topics ranging from tiger ecology to critiques of government policy from a selection of over seventy that have appeared in various national and international journals, spanning Dr Karanth’s work over two decades. It is essential reading for serious students of conservation biology and will serve as a vital information resource for tiger conservationists in particular.

**2011 ♦ 340 pp. ♦ Paperback**  
**978-81-7371-609-6 ♦ ₹ 550.00**

## Spiders of India

*P A Sebastian & KV Peter*

*Spiders of India* is the only modern book available on the subject, and will prove an invaluable resource for professionals, students, naturalists, and researchers in zoology, entomology, ecology and physiology. The first part of the book looks at the morphology and anatomy of spiders, as well as systematics and evolution. The second part provides detailed descriptions of selected species. The book also contains, importantly, a decisive and updated checklist of the 1,520 spiders which are found in India. It is richly illustrated with line drawings and diagrams, and more than 150 colour photographs, many documented for the first time.

**2009 ♦ 736 pp. ♦ Hardback**  
**978-81-7371-641-6 ♦ ₹ 1450.00**



**Survival Strategies: Cooperation and Conflict in Animal Societies**

*Raghavendra Gadagkar*

Did you know that Tasmanian hens have two husbands? That vampire bats will share food with hungry fellow bats and that Hanuman langurs commit infanticide? Why creatures, great and small, behave in such fascinating and seemingly perplexing ways is explained in this delightful account of the evolutionary foundations of animal social behaviour. Illustrated with both photographs and explanatory diagrams, this expert and inviting tour of the social world of animals will inform and charm anyone curious about the motivations behind the amazing range of activity in the animal kingdom.

**1998 ♦ 192 pp. ♦ Paperback**  
**978-81-7371-114-5 ♦ ₹ 225.00**

**Way of the Tiger, The**

*Ullas K Karanth*

This book tells you everything you want to know about tigers. It is an outstanding primer on tigers and very simply and well-written. The author talks about the human fascination for tigers, and then examines the social and predatory behaviour in wild tigers; evolution and genetics; research and census methods; threats, past and present, to the existence of this endangered mega-carnivore; and various conservation policies necessary to reverse the decline of tigers. What sets it apart is the positive conservation message that underlines the text; the author disagrees with 'doomsday prophecies' and convincingly argues that wild tigers can be saved with timely action guided by reliable knowledge.

**2006 ♦ 144 pp. ♦ Paperback**  
**978-81-7371-556-3 ♦ ₹ 225.00**

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INDIA—A LIFESCAPE

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**Amphibians of Peninsular India**

*R J Ranjit Daniels*

This work introduces laypersons, naturalists and students of biology to the field study of amphibians. It discusses the biology and ecology of amphibians in general and provides an updated checklist of Indian amphibians. It illustrates over 75 species of Indian amphibians including caecilians, frogs, toads and tree frogs, providing details of their taxonomy, appearance, call and natural history.

For the first time, an illustrated key has been developed in a simple style for Indian amphibian families and genera. It provides suggestions for students to undertake projects and methodology for the same. It could be recommended for reading at undergraduate and postgraduate levels. All universities offering courses in zoology, wildlife biology, ecology and taxonomy will find the book useful.

**2004 ♦ 284 pp. ♦ Paperback**  
**978-81-7371-514-3 ♦ ₹ 595.00**

**Butterflies of Peninsular India**

*Krushnamegh Kunte*

This book represents the first fascicle in this series. This important new work of reference is also a joy to look at and a pleasure to read, combining comprehensiveness, consistency of style and beauty to this degree. Ancillary information on distribution, ecology and behaviour will help design field exercises and projects focussing on first-hand observations of living organisms. This essential source of visual and factual reference is an indispensable book for everyone who cares

about nature, and will stimulate popular interest in the broader spectrum of India's biological wealth.

2000 ♦ 272 pp. ♦ Paperback  
978-81-7371-354-5 ♦ ₹ 625.00

### Fresh Water Fishes of Peninsular India

*R J Ranjit Daniels*

This is a lucidly written field guide describing 75 taxa of fishes that commonly inhabit the fresh waters of Peninsular India. It can serve as a good addition to the existing biology textbooks, as many of the species have not been studied until now. The book is lavishly illustrated with black and white illustrations, line drawings, as well as colour photographs. Common English and local names are given in addition to scientific nomenclature for the fishes.

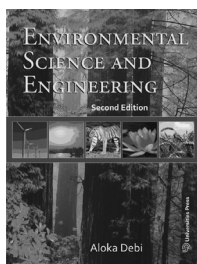
2001 ♦ 224 pp. ♦ Paperback  
978-81-7371-409-2 ♦ ₹ 495.00

## TEXTBOOKS

### NEW

### Environmental Science and Engineering (Second Edition)

*Aloka Debi*



**Environmental Science and Engineering** has been specially designed to explain what the

environment is, how it is polluted and destroyed, the effects of pollution, and how effectively the damage to the environment can be controlled. The second edition of the book incorporates more insights into prevention against pollution, new case studies, as well as a chapter on 'Recent Sources of Pollution' that includes marine, thermal and nuclear pollution.

#### The book

- discusses the **acts and laws** that govern pollution
- provides a number of relevant **case studies**
- suggests **solutions** to the environmental problems
- provides **extensive exercises**
- is based on the **undergraduate syllabus prescribed by the UGC** for engineering students throughout India

**Contents:** Environment ❖ Resources ❖ Population ❖ Ecology ❖ Biodiversity ❖ Air pollution ❖ Water pollution ❖ Land pollution ❖ Noise pollution ❖ Recent sources of pollution ❖ Environmental legislation (Acts) ❖ Social issues and the environment

2012 ♦ 268 pp. ♦ Paperback  
978-81-7371-811-3 ♦ ₹ 275.00

### Questions and Answers in Environmental Science

*S K Basu & A K De*

- What are the functions of an ecosystem?
- What is minor forest produce?
- Define watershed.
- What is composite disaster mapping?
- Name some alternate sources of energy.
- What is demographic stochasticity?
- What makes the Ramsar Convention significant?

## BIODIVERSITY

The sustainable future of humanity lies in understanding the earth and its environment. For this reason, environmental science has a purview that overlaps several other disciplines; from biology to economics, geology to sociology, every subject has a significant relationship with some area of environmental science. However, it is often difficult, time-consuming and exhaustive to keep pace with new trends in such a broad-based field.

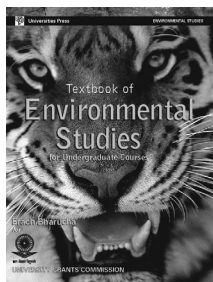
This compact book uses brief entries packed with information to answer more than 1,500 questions that form the core of environmental studies. Though the chapters are sorted by subject, the reader can move freely between questions in order to best understand the inter-connections that shape this topic.

*Questions and Answers in Environmental Science* also includes a section with multiple-choice questions, fill in the blanks and match the columns that will help test one's reading of the subject.

**2005 ♦ 396 pp. ♦ Paperback**  
**978-81-7371-547-1 ♦ ₹ 325.00**

### **Textbook of Environmental Studies for Undergraduate Courses**

*Erach Bharucha*



The importance of environmental studies cannot be disputed since the need for sustainable development is a key to the future of mankind. Recognising this, and the deteriorating status of the environment, the Honorable Supreme

Court of India directed the University Grants Commission (UGC) to introduce a basic course on environmental education for undergraduate courses of all branches of higher education, to be implemented by every university and college in the country. Accordingly, the UGC constituted an Expert Committee to frame a 6-month Core Module Syllabus for environmental studies. This textbook is the outcome of the UGC's efforts. It has been prepared as per the Core Module Syllabus and is designed to bring about an awareness of a variety of environmental concerns.

**2005 ♦ 296 pp. ♦ Paperback**  
**978-81-7371-540-2 ♦ ₹ 175.00**

## ══════ FORTHCOMING ══════

### **Textbook of Environmental Studies for UG Courses (Second Edition)**

*Erach Bharucha*

- The environmental issues described in the curriculum set down by the UGC are dealt with. The UGC syllabus is strictly adhered to.
- The book is teacher-friendly with case studies, examples and visuals.
- Language is very simple making it easy for arts, science and commerce students to comprehend the concepts.
- Field work is included in Unit 8.

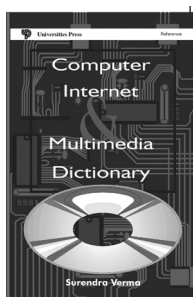
Specially designed questions and summary are provided for each chapter.

# REFERENCE

## DICTIONARIES

### Computer, Internet and Multimedia Dictionary

*Surendra Verma*

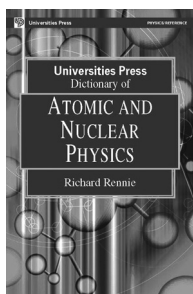


This dictionary covers the core of Information Technology featuring about 3500 entries on computing, telecommunications, and digital electronics. It also covers the Internet and World Wide Web technologies and includes important people, machines and events in the history of computing, and provides glimpses of latest discoveries/inventions of the 21st Century.

**1998 ♦ 256 pp. ♦ Paperback**  
**978-81-7371-091-9 ♦ ₹ 325.00**

### Universities Press Dictionary of Atomic and Nuclear Physics

*Richard Rennie*



*Universities Press Dictionary of Atomic and Nuclear Physics* contains more than 2000 entries

that explain, clearly and concisely, the most relevant and frequently used terms associated with atomic and nuclear physics. An ideal tool, the dictionary articulates the scope of modern research and discoveries in particle physics, questions of philosophical interest, and applications for nuclear physics in nuclear energy and nuclear medicine.

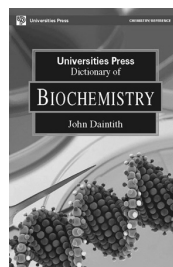
Among the many topics covered are  
❖ absolute temperature ❖ kinetic theory  
❖ singularity ❖ magnetism ❖ spectroscopy  
❖ cathode ray ❖ plutonium ❖ transmutation  
❖ half-life ❖ resolving power ❖ valence bond theory ❖ hydrogen molecule

More than 40 line drawings and a set of appendices (including a bibliography) help to illustrate many complex concepts, and cross-references guarantee that the reader will waste no time in finding the right definition.

**2006 ♦ 256 pp. ♦ Paperback**  
**978-81-7371-536-5 ♦ ₹ 205.00**

### Universities Press Dictionary of Biochemistry

*John Daintith*



*Universities Press Dictionary of Biochemistry* contains more than 2,000 entries that explain, clearly and concisely, the most relevant and frequently used terms in the field of biochemistry. The dictionary is an ideal tool, articulating the basics of modern biochemistry, including basic organic and physical chemistry, cell metabolism

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## DICTIONARIES

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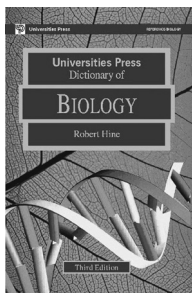
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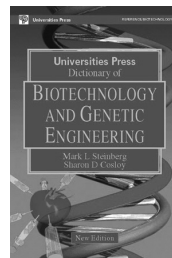


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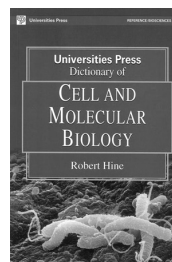
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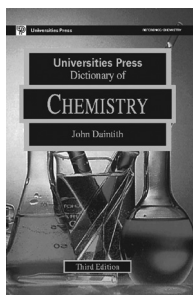
entries that explain, clearly and concisely, the most relevant and frequently used terms in one of the most fascinating areas of contemporary biosciences. The dictionary is an ideal tool, articulating modern cell and molecular biology, including cell structure, molecular genetics, cell metabolism, cell physiology, and laboratory techniques. Among the many topics covered are: • AIDS • HIV • parthenogenesis • chromosome map • lymphatic tissue • spore • endorphin • molecular weight • transplantation • fission • nitrification • vascular tissue

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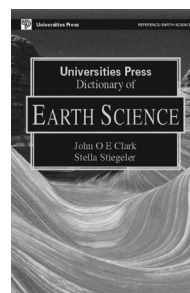
Extensively revised and expanded, this dictionary contains approximately 3,000 entries that explain, clearly and concisely, the techniques, materials, applications, and specialised uses of everyday chemical terms. More than 250 new terms reflect modern chemical nomenclature and the most up-to-date information on properties of the

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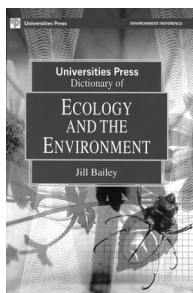


The *Universities Press Dictionary of Earth Science* contains more than 3,000 entries that explain, clearly and concisely, the most frequently used terms in Earth science. Given the constant and often unexpected changes in our global environment, the dictionary is an ideal resource for understanding how these events impact our planet and our lives. More than 100 line drawings illustrate many complex concepts, and extensive cross-references guarantee that no student, teacher, or Earth science professional will waste time searching for the right definition.

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*Jill Bailey*



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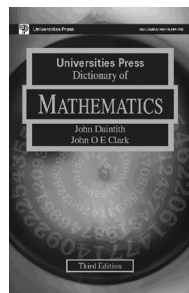
- acid rain
- nuclear energy
- biodiversity
- pollutant
- deforestation
- resource management
- global warming
- smog
- halon
- waste disposal
- life cycle
- wildlife management

More than 30 line drawings and a set of appendixes (including a bibliography of print and Web resources) help to simplify many complex concepts, and cross-references guarantee that the reader will waste no time in finding the right definition.

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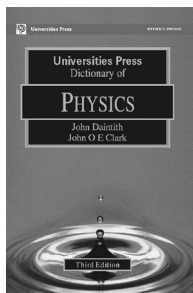
Extensively revised and expanded, the dictionary contains approximately 3,000 entries that explain, clearly and concisely, the most important and commonly used terms in every branch of mathematics. More than 200 new terms increase coverage of applied mathematics and computer science. An extensive appendix contains information about conversion factors and formulas. Almost 100 line drawings illustrate complex concepts, and extensive cross-references guarantee that no user will waste time searching for physical quantities, units of measure, conversion factors, formulas, important constants, and the Greek alphabets.

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John Daintith & John O E Clark



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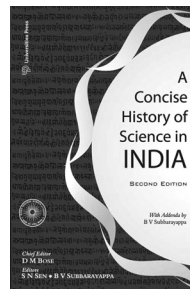
## Agenda of the Apprentice Scientist, The

Nicole Ostrowsky

See page 26  
.....

## Concise History of Science in India, A (Second Edition)

D M Bose, S N Sen & B V Subbarayappa (Eds.)



India's contributions in the field of science have been very influential in the development of human civilisation. The decimal place value system and the Ayurvedic way of life are just two well-known legacies of this ancient culture. Yet there are only a few books which provide an unbiased and authentic view of this world. One reason for this is that the study of Indian science through the ages involves the complex integration of the knowledge of many languages and diverse scientific disciplines. Through the years, there has been growing interest in this study as an important aspect in understanding man's interaction with nature, his material life and cultural patterns. The Indian National Science Academy, through its History of Science Board (1958) and the National Commission for the Compilation of History of Sciences in India (1967) renamed in 1989 as the Indian National Commission for History of Science sought further means to stimulate this interest among universities and scholars. The result was the publication of *A Concise History of Science in India*.

This book attempts to present a brief account of the development of science from early times to Independence, in one of the most ancient civilisations of the world. After nearly four decades since its publication, A

## GENERAL INTEREST

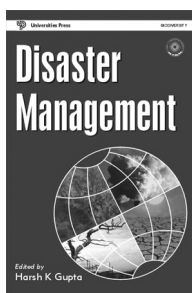
*Concise History of Science in India* remains one of the most extensive and authentic account of Indian science through the ages. Yet further studies in the field have brought to light new material. This revised edition, taken up by B V Subbarayappa, one of the three original editors, seeks to integrate the new information with the knowledge already at hand.

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978-81-7371-619-5 ♦ ₹ 1095.00

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## Disaster Management

*Harsh K Gupta*



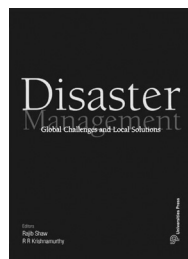
This book contains seven chapters, each dealing with one major natural disaster encountered in our country. Each of the authors is an expert in that particular field. The outstanding contribution of this book is that it not only deals with the forecasting and description of the various natural disasters, but also stresses on the management aspect, exhaustively detailing the necessary steps that need to be taken to deal with the fallout in the wake of these disasters. The book also describes the advances in remote sensing and the state-of-the-art technology available in India for the monitoring and prediction of these phenomena. It also draws up a comprehensive warning system to be implemented, in order to

minimise the extensive losses to life and property that occur year after year.

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## Disaster Management: Global Challenges and Local Solutions

*Rajib Shaw & R R Krishnamurthy*



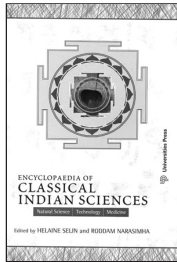
We are becoming increasingly vulnerable to natural disasters. Disaster management is therefore an important topic for all—from high school students to researchers. Disaster data in recent years show increasing trends in physical, social and economic impacts. While a global perspective of disaster management is necessary, it is also important to emphasise local solutions. This book targets some of the key issues of disaster management, focussing on innovative research and application. The chapters are organised under 5 interrelated themes: • Hazards and disasters • Risk and vulnerability • Technology • Education and community • Crosscutting issues. It will serve as an up-to-date reference book for researchers and practitioners in the field of disaster management throughout the world. This book will be useful for students, teachers, researchers and practitioners in the field of disaster management. It is an invaluable resource for faculty of departments of geology and environmental science students of geology and environmental science

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Helaine Selin & Roddam Narasimha



India's contributions to science and technology are among the most ancient and influential in the world. In mathematics, the decimal place value system with zero as a numeral, used universally today, owes its origin to India. The science of Ayurveda, which has been practised for millennia in India, is now gaining wider acceptance even as many ancient remedies are turned into modern drugs. Indian astronomical computations, ritual geometry, brick technology and metallurgical innovations have been among the finest achievements in the world of science and technology.

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## GENERAL INTEREST

elder colleague', or your 'older colleague', then *Words Frequently Confused*, the second volume in the four volume series, *Know Your English*, is the book you should read to clear your doubts.

Based like the first volume, "*Idioms and their Stories*" on the popular column *Know Your English*, which has been published in *The Hindu* since 1982, this book deals with words that often confuse speakers and learners of English, whether they are new to the language or have had years of exposure to it.

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### NEW

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#### **Paths of Innovators, Volume I**

*R Parthasarathy*

See page 31  
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#### **Paths of Innovators, Volume II**

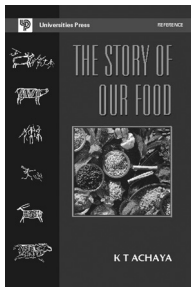
*R Parthasarathy*

See page 32  
.....

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#### **Story of Our Food, The**

*K T Achaya*



- Our distant ancestors speared animals for food. How do we know this?
- Why did vegetarian habits develop so long ago only in India?

- Why were food, health and natural elements considered if separable?
- What do the words hot and cold, when applied to food, mean in India?
- How old are idli, the vada and curd-based shrikand?
- When and where did the mango originate? And the papaya?
- Why were chillies not used in Akbar's kitchen?
- What was India's first beverage-coffee or tea?

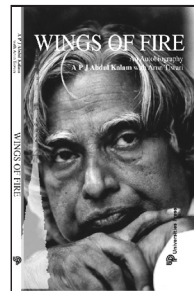
From which Indian language did the words curry, betel leaf and sugar enter into English language?

The answers to all these questions, and many more, can be found in this amazing and richly-textured little book. It shows how our wonderful Indian cuisine, with all its regional variants, is the outcome of food plants brought into India from numerous directions over thousands of years. How food occupied an important niche in the natural cycle. And of a social ethic in which cleanliness was indeed next to godliness.

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*A P J Abdul Kalam with Arun Tiwari*



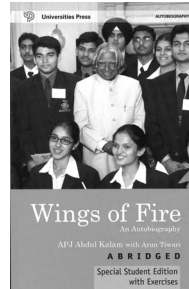
Avul Pakir Jainulabdeen Abdul Kalam, the son of a little-educated boat-owner in Rameswaram, Tamil Nadu, had an unparalleled career as a defence scientist, culminating in the highest civilian award of India, the Bharat Ratna. As chief of the country's defence research and development programme, Kalam demonstrated

the great potential for dynamism and innovation that existed in seemingly moribund research establishments. This is the story of Kalam's rise from obscurity and his personal and professional struggles, as well as the story of Agni, Prithvi, Akash, Trishul and Nag—missiles that have become household names in India and have raised the nation to the level of a missile power of international reckoning. This is also the saga of independent India's struggle for technological self-sufficiency and defensive autonomy—a story as much about politics (domestic and international) as it is about science.

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