

## **Aerobasics**

### **An Introduction to Aeronautics**

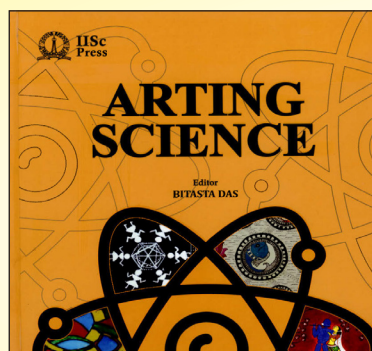
by S. P. Govinda Raju

**About the Book:** Modern aircraft are designed for the utmost in performance and safety as the penalty for any shortfalls in these areas is very heavy. Thus they incorporate many complex systems and subsystems each developed using advanced scientific concepts and manufacturing methods. Aircraft design is thus undertaken by a group of design engineers each with a specialized knowledge about a few subsystems but only a rough understanding of the whole airplane. This rough overall understanding of the concepts and principles based on which the airplane is organized is a vital element of a design engineer's toolbox. It helps him perform his own specialized task such that it fits in the complete design seamlessly. This overall knowledge is not easily acquired from modern technical literature which is voluminous and primarily caters to special interest groups. This author has made an attempt to gather this knowledge and present it concisely so that it will serve as a broad general introduction to aircraft engineering. This material should be useful not only to fresh engineers entering the aeronautical industry but also to students in all the relevant branches of engineering. It is also likely to be of general interest to any scientifically inclined readers as a source of basic information in a number of aeronautical disciplines. The general philosophy adopted here is best summarized by the following quote from the Panchatantra:

*Knowledge indeed is unlimited, but life is short and there are many obstacles to the acquisition of knowledge. Therefore one must grasp the essential knowledge leaving out much detail just as milk is extracted from a watery mixture by the swans.*

This book should be useful not only to fresh engineers entering the aeronautical industry but also to students in all the relevant branches of engineering. It is also likely to be of general interest to any scientifically inclined reader as a source of basic information in a number of aeronautical disciplines.

**ISBN 9788192570709 | PB | 264pp | Pub Date: 2014 | Price: ₹860**

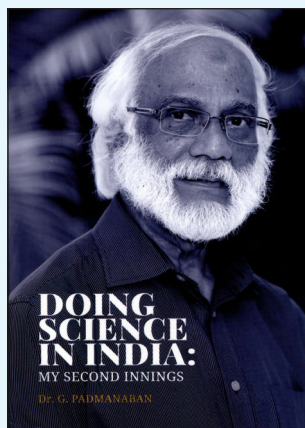


## **Arting Science**

Edited by Bitasta Das

**About the Book:** The book *Arting Science* brings together two seemingly separate disciplines – the Arts and the Science. The phrase Arting Science emerge from the essence of the book, that is, expressing science through art. The verb form of the word Art has been deliberately deployed to mean the act of doing art to depict Science. It opens a new dimension of expressing scientific aesthetics through the mode of art.

**ISBN 9788192570723 | HB | 52pp | Pub Date: 2016 | Price: ₹860**



## Doing Science in India

### My Second Innings

by Dr. G. Padmanaban

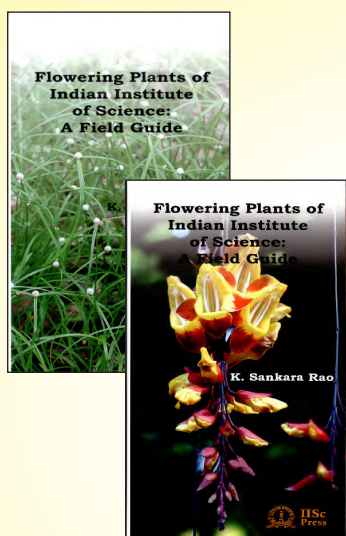
**About the Book:** In this memoir, well-known Indian biochemist and biotechnologist, G. Padmanaban traces his journey, growth and evolution as a scientist from being— a student of the Indian Institute of Science (IISc), Bengaluru to—becoming the Director of its alma mater in 1994. *Doing Science in India: My Second Innings* is an autobiographical account of his key scientific achievements and developments that took place after 2000.

**About the Author:** Professor G. Padmanaban is the first student of the Indian Institute of Science, Bengaluru to have become its Director. He has spent his entire career at IISc, except for his visit to the University of Chicago as a visiting scientist/ Professor for a decade during 1973-1986. He has contributed significantly to the initiation of recombinant DNA research in the country with his studies on liver cytochrome-P450 gene expression. He has been working with the malaria parasite biology for nearly three decades. His group discovered and characterized the heme-biosynthetic pathway and its role in parasite development during the transmission stages. He has shown that curcumin has tremendous potential to treat malaria as an adjunct drug. He has produced over 50 PhDs and published over 150 papers.

He has played an integral part in the growth of Life Sciences and Biotechnology in the country. He has mentored a generation of students, junior and senior scientists and entrepreneurs. He chairs several technical committees for government S&T establishments. He has received several awards including the highest civilian awards, Padma Shri (1991) and Padma Bhushan (2003).

He continues to be active in research, after his formal retirement in 1998.

ISBN 9788192570754 | HB | 132pp | Pub Date: 2018 | Price: ₹2290



## Flowering Plants of Indian Institute of Science

### A Field Guide (Volume I & Volume II)

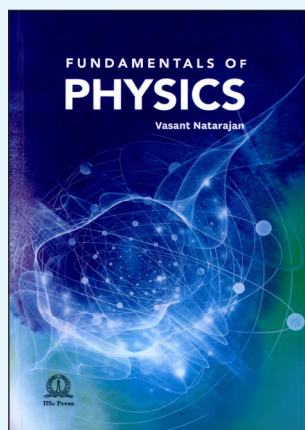
by K. Sankara Rao

**About the Book:** These books are a compendium to portray the flora and plant wealth in the Indian Institute of Science campus. 700 and odd taxa are presented in two volumes with photographs: Volume I showcases trees, palms, woody climbers, shrubs, herbs, succulents, cacti and orchids. Volume II covers trees, shrubs, trailers and climbers, herbs, grasses, sedges and cat-tails, plants of water and marsh, flowering parasites, non flowering seed plants and lower groups.

This field guide contains 700 and odd taxa in two volumes with images. The author has organized plants found on IISc campus by their habit and structure. Trees, shrubs and herbs, which make up the bulk of the entries in the book, are divided in two volumes.

**About the Author:** Prof. K. Sankara Rao, Ph.D., FASc, FLS, Distinguished Fellow at the Centre for Ecological Sciences, Indian Institute of Science, Bangalore has been a researcher in Plant Biology. His current interests are systematic, floristics and conservation of plant diversity.

ISBN 9788194835165 | PB | 952pp | Pub Date: 2009 | Price: ₹6000 (2 Vol. Set)



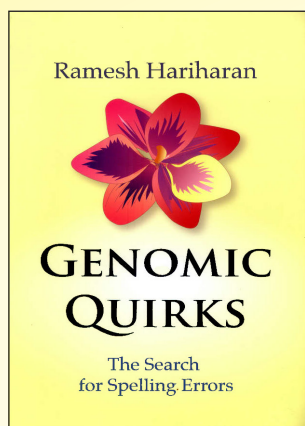
## Fundamentals Of Physics

by Vasant Natarajan

**About the Book:** Human beings by nature are curious and science helps to appease our inquisitiveness. The understanding of basic physics is foremost in the modern world leading to advancement in science and technology perpetually. This book provides an insight to key concepts to physics ranging from classical to quantum mechanics, and introducing the physics behind everyday technologies of AC, refrigerators, wireless communication, CCD camera, etc. The beauty of the book lies in the fact that it makes the learning of physics enthralling without going into much of the mathematics. For those who are mathematically inclined, each chapter is followed by a set of problems which deepen the ideas introduced in the chapter, and helps make connections between basic physics and seemingly advanced concepts.

**About the Author:** Vasant Natarajan earned his B.Tech. from IIT Madras; his M.S. from RPI Troy; and his Ph.D. from MIT Cambridge. He then worked at AT&T Bell Labs, Murray Hill, New Jersey before joining the Physics Department at IISc in 1996, where he has been ever since. His research interests are in laser cooling and trapping of atoms; quantum optics; optical tweezers; quantum computation in ion traps; and tests of time-reversal symmetry violation in the fundamental laws of physics using laser-cooled atoms.

ISBN 9788192570792 | PB | 186pp | Pub Date: 2019 | Price: ₹1430



## Genomic Quirks

### The Search for Spelling Errors

by Ramesh Hariharan

*An account of the twists and turns in the search for genomic errors.*

**About the Book:** This is a book of real stories about the search for genomic spelling errors that have stark consequences: infants who pass away mysteriously, siblings with misplaced organs, a family with several instances of vision loss, sisters whose hearts fail in the prime of their youth, a boy whose blood can't carry enough oxygen, a baby with cancer in the eye, a middle-aged patient battling cancer, and the author's own color blindness. The search in each case proves to be a detective quest that connects the world of medical practice with that of molecular biology, traversing the world of computer algorithms along the way.

**About the Author:** Ramesh Hariharan is an Adjunct Professor at the Indian Institute of Science, and a Co-founder and Chief Technology Officer at Strand Life Sciences. The stories in this book come from first-hand experience analyzing genomes of patients.

ISBN 9788192570747 | HB | 340pp | Pub Date: First Edition 2018 | Price: ₹2290







## Jal Jungle Zameen

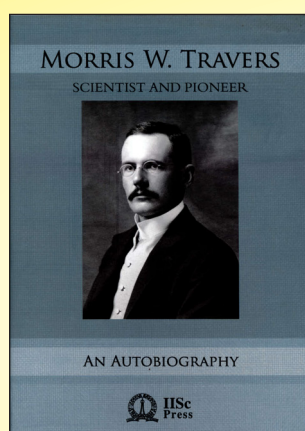
### In the Age of Science and Technology

by Bitasta Das

**About the Book:** Traditionally the edifice of culture has been built on its distinctiveness from nature: culture is a human institution while nature is the exterior realm; culture encompasses human endorsed rules, values and exercise of will while nature ordains its own operation. However, most cultures have held nature in high esteem. In India, the earth has been conceived of as 'mother'. The concept of ishavyasam entails that divinity resides everywhere in nature and hence, it must be revered.

**About the Author:** Dr. Bitasta Das is Instructor-Humanities at the Undergraduate Programme of Indian Institute of Science, Bangalore. She has a Ph.D. in Cultural Studies and has qualified the NET in Folk Literature. At UG-IISc she teaches two papers: 'Cultural Analysis' and 'Mapping India through the Folk Arts'.

ISBN 9788192570778 | HB | 64pp | Pub Date: 2019 | Price: ₹1150



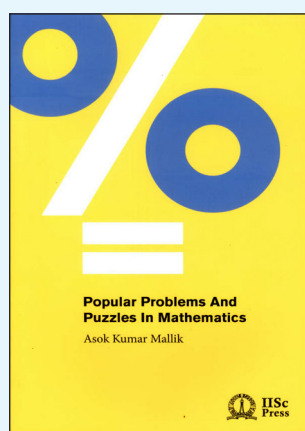
## Morris W. Travers

### A Scientist And A Pioneer An Autobiography

Edited by David M.W. Travers & John R. Ainslie

**About the Book:** Dr Morris W. Travers, was the Founding Director of the Indian Institute of Science, Bangalore, who fought for educational policies that ensured its success as the centre of Indian scientific learning and research. He was born in Kensington, London, England in 1872. He attended University College, London where he studied chemistry under Sir William Ramsay. Together they discovered three new elements Neon, Krypton and Xenon. Dr Travers then went on to teach at University College, Bristol, where he became a leader of the university movement that promoted the creation of the University of Bristol from the College and other educational institutions in the city. At the end of his term at IISc as the first Director, he returned to England where he was given a life appointment at the University of Bristol in appreciation of his founding leadership.

ISBN 9788192570730 | HB | 436pp | Pub Date: 2016 | Price: ₹4300



## Popular Problems And Puzzles In Mathematics

by Asok Kumar Mallik

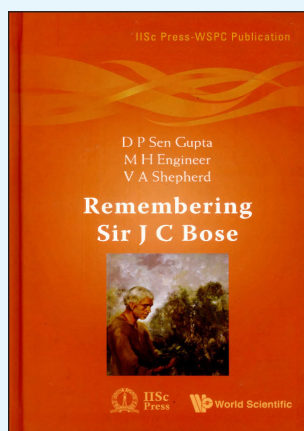
**About the Book:** Innovative thinking backed by logical reasoning is the key to the puzzles in *Popular Problems and Puzzles in Mathematics*. Collected over several years by the author, more than 150 elegant, intriguing numerical challenges are presented here. The answers are easy to explain, but one would devilishly find it hard without this book. One's ability to construct a mathematical proof will be rigorously tested in these problems – even in the case of a mathematics teacher. For true maths lovers, there is even a section on historically prominent problems. Designed for high-school students and teachers with an interest in mathematical problem solving, this stimulating collection provides a new twist to familiar topics that introduce unfamiliar topics.

**Key Features:** • Suitable for high-school students and maths buffs

- More than 200 problems covering different areas of elementary mathematics
- Brainstorming problems graded as easy, moderate and difficult
- Complete solutions included

**About the Author:** Asok Kumar Mallik is a Retired Professor of the IIT, Kanpur.

ISBN 9788192570761 | PB | 216pp | Pub Date: 2018 | Price: ₹1430



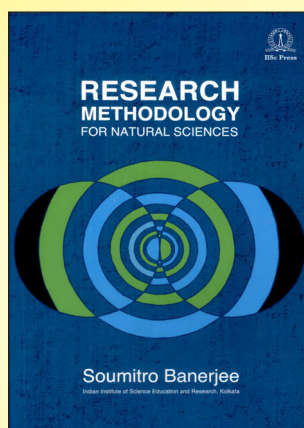
## Remembering Sir J C Bose

by D P Sen Gupta, M H Engineer & V A Shepherd

**About the Book:** The year 2008 marks the 150th birth anniversary of Sir Jagadish Chandra Bose who, at a relatively young age, established himself among the ranks of European scientists during the heyday of colonial rule in India. He was one of those great Indian scientists who helped to introduce western science into India. A physicist, a plant electrophysiologist and one of the first few biophysicists in the world, Sir J C Bose was easily 60 years ahead of his time and much of his research that was ignored during his lifetime is now entering the mainstream. As the inventor of millimeter waves and their generation, transmission and reception, and the first to make a solid state diode, he was the first scientist who convincingly demonstrated that plants possess a nervous system of their own and “feel” pain. J C Bose later spent his life’s savings to set up the Institute which carries his name in Calcutta and Darjeeling.

This book covers Bose’s life in colonial India, including the general patriotic environment that pervaded at the time and how he became one of the flag bearers of the Bengal Renaissance. It also examines the scientific achievements of this polymath and his contributions to physics and plant electrophysiology, while highlighting his philosophy of life.

ISBN 9789814271615 | HB | 184pp | Pub Date: 2009 | Price: ₹860



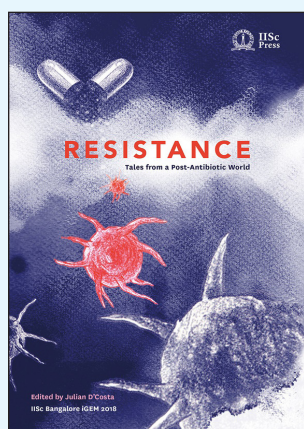
## Research Methodology

For Natural Sciences

by Soumitro Banerjee

**About the Book:** This book introduces budding scientists to the method of sciences. Science tries to find out the laws governing the material world and explain various natural events and phenomena following a definite methodology: proposing hypotheses and postulates and accepting or rejecting these based on evidence. This book contains a step-by-step exposition of the method. The book begins with philosophical issues like subjective versus idealism, logical reasoning, causality etc. Then the methodological issues in proposing and testing hypotheses and postulates, making measurements, and conducting theoretical research are covered. The third part deals with the ethics of science and the art of scientific communication.

ISBN 9788194835172 | PB | 268pp | Pub Date: 2022 | Price: ₹2000



## Resistance

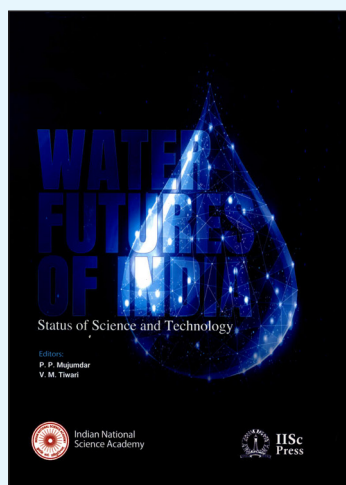
Tales from a Post-Antibiotic World

Edited by Julian D'Costa

**About the Book:** *Resistance: Tales from A Post-Antibiotic World* is an anthology of short fiction by IISc undergraduates. Edited by Julian D'Costa and Foreword by Prof. Dipshikha Chakravorty. Printed in single colour, this book tries to bring public attention to a serious contemporary issue on health and existence of life.

Imagine a world where tackling a football player can kill them and send you to jail. Imagine a world where people swallow cocktails of viruses every week to protect themselves from bacteria. A world that follows naturally from today. This anthology of short fiction by undergraduates at IISc Bangalore explores the insidious crisis of antimicrobial resistance with stories set across India and the world, as our continued misuse of antibiotics encourages bacteria to develop defences against them – slowly but surely.

ISBN 9788192570785 | HB | 100pp | Pub Date: 2019 | Price: ₹860



# Water Futures Of India

## Status of Science and Technology

Edited by P P Mujumdar & V M Tiwari

**About the Book:** Status of Science and Technology is the result of an Indian National Science Academy (INSA) initiative to map the responsiveness of India's science and technology to an impending water crisis. With contributions from eminent scientists and practitioners, the focus of the book is on science and technology issues; additionally, chapters also typically address relevant policy interventions.

The book opens with an overview of the current status of surface and ground water resources in the country, using data from secondary sources. Subsequent chapters cover tools for estimation, measurement and monitoring of water resources at various temporal and spatial scales. Snow and glacier hydrology, isotope techniques, groundwater prospecting and applications of remote sensing are covered in detail in individual chapters. Considerable progress has been achieved in the country in the fields of wastewater treatment technologies and desalination of seawater and brackish water to generate new sources of water. In the current and evolving scenario of acute water shortages in various parts of India, improving water-use efficiencies in coupled agriculture-climate systems and urban water distribution emerge as important themes, as a measure to optimally utilise resources. The book details existing knowledge in each of these areas. On a larger scale, hydrologic extremes of floods and droughts, river sedimentation, and climate change impacts on water resources are reviewed. The book concludes with a chapter on broad-level recommendations for policy interventions in the water sector.

The language in the chapters is kept simple and non-technical to the extent possible, to make it appealing to the general reader.

ISBN 9788193948200 | HB | 500pp | Pub Date: 2019 | Price: ₹4290

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