

# APPLIED SCIENCES

## CHEMISTRY

### Basic Thermodynamics

TEXTBOOK

E. Guha

Audience: Undergraduate students majoring in Physics and Students of Engineering

Solutions Manual: Available for Teachers (ISBN: 978-1-84265-034-9)

2001 287 pp. 105Figs. 160 x 240 750g Hb ISBN: 978-1-84265-000-4 £ 22.00 / US\$ 44.00

### Chemistry for Green Environment

Editors: M. M. Srivastava, R. Sanghi

Audience: Students, Teachers, Researchers & Professionals

2005 385 pp. 58Figs. 45TbIs. 185 x 240 950g Hb ISBN: 978-81-7319-620-1 £ 58.00 / US\$ 118.00

### Composite Materials: *Production, Properties, Testing and Applications*

K. Srinivasan

TEXTBOOK

*Composite Materials: Production, Properties, Testing and Applications* discusses in detail reinforcements, matrices, composites such as MMCs, PMCs, CMCs, CCCs and IMCs alongwith production processes, properties and applications, and also testing of composites both destructive and nondestructive. Mechanics of composites based on rule of mixtures at an introductory level and numerical problems add value to the book. The importance of composite materials as engineered materials in modern society is clearly brought out.



Audience: Undergraduate Students in Metallurgical, Materials, Mechanical & Chemical Engineering

2009 146 pp. 160 x 240 Hb ISBN: 978-1-84265-491-0 £ 19.95 / US\$ 39.95

### Computers and their Applications to Chemistry, *Second Edition*

R. Kumari

TEXTBOOK

Audience: Undergraduate Students

2005 356 pp. 185 x 240 900g Hb ISBN: 978-1-84265-258-9 £ 34.95 / US\$ 69.95

### Detection of Common Inorganic Ions: *Environment Friendly Tests*

A. Ahmad

TEXTBOOK

Audience: Undergraduate Students, Professionals & Researchers

1999 139 pp. 140 x 215 152g Pb ISBN: 978-81-7319-209-8 £ 12.00 / US\$ 24.00

### Engineering Chemistry: *A Textbook*

H. K. Chopra, A. Parmar

TEXTBOOK

Audience: Undergraduate Students in Chemistry & Engineering

2007 624 pp. 396Figs. 58TbIs. 185 x 240 1350g Hb ISBN: 978-1-84265-362-3 £ 54.95 / US\$ 98.00

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# APPLIED SCIENCES

## CHEMISTRY

### Essentials of Crystallography

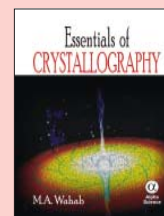
M. A. Wahab

TEXTBOOK

*Essentials of Crystallography* presents a comprehensive study of the essential aspects of crystallography. The topics include a detail discussion of geometry and symmetry of crystals, a simplified approach to derive the point groups and space groups, methods of crystal growth and related theories, imperfections in crystalline solids, various diffraction methods, procedures for solving crystal structures and computing methods in crystallography. Keeping in view the diverse nature of readers, the treatments and the mathematics used in the book have been kept as simple as possible.

**Audience:** Postgraduate Students & Researchers in Physics, Chemistry, Biology, Mineralogy

**2009 332 pp. 228Figs. 48TbIs. 185 x 240 750g Hb ISBN: 978-1-84265-392-0 £ 49.95 / US\$ 98.00**



### Fundamental Concepts of Environmental Chemistry, Third Edition

G. S. Sodhi

**CONTENTS:** Preface to the Third Edition / Preface to the First Edition / Acknowledgements / **Part I: Abiotic Origin:** Atoms and Molecules / Solid Earth / Hydrosphere / Atmosphere / Biosphere / **Part II: Biotic Origin:** Life / Cellular Environment / Cellular Alterations / **Part III: Energy:** Energy Flow / Fossil Fuels / Terrestrial Energy / Solar Energy / Nuclear Energy / **Part IV: Air Pollutants:** Sulfur Oxides / Nitrogen Oxides / Carbon Monoxide / Photochemical Smog / Greenhouse Gases / Depletion of Stratospheric Ozone / Suspended Matter / Indoor Pollution / Hydrocarbons / **Part V: Water Pollutants:** Classification of Water Pollutants / Heavy Metals / Soaps and Detergents / Paper Mills / Groundwater Pollution / Water Treatment / **Part VI: Pollutants From Industry:** Polymers and Plastics / Asbestos / Polychlorinated Biphenyls / Food Additives / Mining Operations / **Part VII: Pollutants From Agriculture:** Fertilizers / Insecticides / Fungicides and Herbicides / **Part VIII: Waste Management:** Solid Waste / Hazardous Waste / **Part IX: Unconventional Pollutants:** Noise Pollution / Light Pollution / **Part X: Environmental Restoration:** Is it Possible? / International Efforts / India's Efforts / Index.

**Audience:** Graduate & Postgraduate Students

**2009 602 pp. 164Figs. 66TbIs. 160 x 240 1100g Hb ISBN: 978-1-84265-394-4 £ 44.95 / US\$ 79.95**



### Green Chemistry: Environment Friendly Alternatives

Editors: R. Sanghi, M. M. Srivasatava

**Audience:** Students of Chemistry & Environmental Science

**2003 372 pp. 63Figs. 30TbIs. 160 x 240 700g Hb ISBN: 978-81-7319-523-5 £ 55.00 / US\$ 110.00**

### Green Solvents: For Organic Synthesis

V. K. Ahluwalia, Rajender S. Varma

**CONTENTS:** Preface / **PART-I:** Use of Water as a Solvent for Organic Reaction / Organic Reaction in Super Critical Water or in Near Water Region / Microwave Assisted Organic Reactions in Water / Organic Synthesis using Biocatalysts / **PART-II:** Organic Synthesis in Super Critical Carbon Dioxide / Organic Synthesis using Carbon Dioxide / **PART-III:** Organic Synthesis using Ionic Liquids / **PART-IV:** Polyethylene Glycol and its Solutions as Green Reaction Medium of Future / **PART-V:** Organic Synthesis using Fluorous Phase Techniques / Index.

**Audience:** Postgraduate Students & Researchers in Chemistry, Environmental Sc. & Green Chemistry

**2009 346 pp. 185 x 240 775g Hb ISBN: 978-1-84265-520-7 £ 49.95 / US\$ 99.00**



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# APPLIED SCIENCES

## CHEMISTRY

### **Nomenclature of Organic Compounds, Revised Edition**

*S. C. Pal*

TEXTBOOK

**Audience:** Undergraduate – Postgraduate Students, Teachers, Researchers & Professionals

**2008 172 pp. 21Figs. 17TbIs. 185 x 240 450g Hb ISBN: 978-1-84265-482-8 £ 19.95 / US\$ 39.95**

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### **Structure and Properties of Solid State Materials**

*Editor: B. Viswanathan*

**Audience:** Undergraduate Students of Physics, Chemistry & Material Science

**2006 140pp. 126Figs. 27TbIs. 185 x 240 520g Hb ISBN: 978-1-84265-336-4 £ 19.95 / US\$ 39.95**

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### **Thermodynamics and Statistical Mechanics**

*P. V. Panat*

TEXTBOOK

**Audience:** Undergraduate – Postgraduate Students & Researchers

**2008 436pp. 90Figs. 185 x 240 950g Hb ISBN: 978-1-84265-495-8 £ 44.95 / US\$ 89.95**

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## MATHEMATICS

### Advanced Engineering Mathematics, Third Edition

R. K. Jain, S. R. K. Iyengar

TEXTBOOK

Audience: Applied Mathematicians & Engineering Students

2007 1410pp 180 x 240 2500g Hb ISBN: 978-1-84265-312-8 £ 39.95 / US\$ 79.95

### Applicable Mathematics in the Golden Age

Editor: J. C. Misra

Audience: Graduates, Instructors & Researchers

2003 644pp 20Figs. 185 x 240 1000g Hb ISBN: 978-81-7319-487-0 £ 95.00 / US\$ 190.00

### Applications of Numerical Techniques with C

Suresh Chandra

Audience: Undergraduate & Postgraduate Students

2006 270pp 42Figs. 160 x 240 650g Hb ISBN: 978-1-84265-343-2 £ 19.50 / US\$ 39.95

### Applied Mathematics

Editors: U. Basu, B. N. Mandal

Audience: Graduate Students, Teachers & Researchers in Applied Mathematics & Theoretical Physics

2008 300pp 40Figs. 185 x 240 700g Hb ISBN: 978-81-7319-874-8 £ 44.95 / US\$ 89.95

### Calculus for Scientists and Engineers: *An Analytical Approach, Revised Edition*

K. D. Joshi

TEXTBOOK

Audience: Students in a first course of calculus, People working in the area of calculus

2007 812pp 150Figs. 160 x 240 1500g Hb ISBN: 978-1-84265-418-7 £ 32.00 / US\$ 64.00

### Differential Equations for Scientists and Engineers

J. B. Doshi

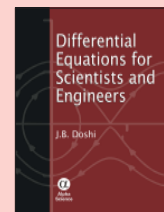
NEW

TEXTBOOK

*Differential Equations for Scientists and Engineers* mainly deals with linear equations, with non-linear equations very briefly discussed in the chapter on ordinary differential equations and towards the end of a chapter on some theoretical considerations. The book concentrates on the so called analytical or exact solutions of the equations. However, a chapter on semi-analytical treatment, for example, using variational and other methods is also included. Throughout the book the emphasis is on applications and development of the solution techniques. Therefore, the theory aspects regarding the existence and uniqueness of solutions and the conditions under which these are satisfied are not covered in the book. However, at some places brief mention is made of these and short proofs are offered whenever possible, without disturbing the flow of the text.

Audience: Senior Undergraduate – Postgraduate Students & Researchers

2010 342pp 52Figs. 185 x 240 900g Hb ISBN: 978-1-84265-366-1 £ 49.95 / US\$ 98.00



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## MATHEMATICS

### **Discrete Mathematical Structures: for Computer Scientists and Engineers**

M. K. Das

TEXTBOOK

Audience: Undergraduate – Postgraduate Students, Professionals & Researchers

2007 554pp 185 x 240 1250g Hb ISBN: 978-1-84265-298-5

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### **Discrete Structures and Automata Theory**

Rakesh Dube, Adesh Pandey, Ritu Gupta

TEXTBOOK

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2006 586pp 185 x 240 1350g Hb ISBN: 978-1-84265-256-5

£ 39.95 / US\$ 79.95

### **Elementary Linear Algebra**

Devi Prasad

Audience: Undergraduate Students

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### **Engineering Mathematics**

S. R. K. Iyengar, R. K. Jain

TEXTBOOK

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2007 510pp 185 x 240 1000g Hb ISBN: 978-1-84265-417-0

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### **Intermediate Mathematical Analysis**

Rajanikant D. Bhatt

TEXTBOOK

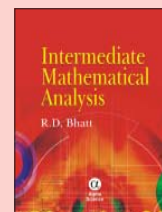
*Intermediate Mathematical Analysis* aims at presenting advanced topics such as continuity, uniform continuity, tests of convergence of series, uniform convergence of series, power series, polynomial approximations and Fourier series in a more general setting. Metric and Normed Linear Spaces are introduced at an early stage and are used wherever found advantageous.

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Audience: Undergraduate and Postgraduate Students

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Devi Prasad

TEXTBOOK

Audience: Undergraduate & Graduate Students of Mathematics

2006 452pp 160 x 240 900g Hb ISBN: 978-1-84265-348-7

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## MATHEMATICS

### Mathematical Analysis

Satish Shirali, Harkrishan L. Vasudeva

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### Mathematical Analysis and Applications: *An Introduction*

J. V. Deshpande

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2004 358pp 20Figs. 185 x 240 950g Hb ISBN: 978-1-84265-189-6 £ 35.00 / US\$ 69.95

### Mathematical Methods

S. R. K. Iyengar, R. K. Jain

TEXTBOOK

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### Modern Applied Mathematics

Editor: J. C. Misra

Audience: Graduate Students, Teachers & Researchers

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### New Engineering Mathematics

A. Chandra Babu, C. R. Seshan

TEXTBOOK

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#### Volume III

Audience: Undergraduate Students

2006 252pp 185 x 240 600g Hb ISBN: 978-1-84265-293-0 £ 19.95 / US\$ 39.00

### Numerical Analysis for Scientists and Engineers: *Theory and C Programs*

Madhumangal Pal

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# APPLIED SCIENCES

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*R. B. Bhat, S. Chakraverty*

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### **Numerical Methods for Engineers and Scientists, Second Edition**

*J. N. Sharma*

TEXTBOOK

Audience: Doctoral & Postgraduate Students, Teachers & Researchers

2007 386pp 185 x 240 1000g Hb ISBN: 978-1-84265-365-4 £ 38.00 / US\$ 75.00

### **Partial Differential Equations for Engineers and Scientists, Second Edition**

*J. N. Sharma, Kehar Singh*

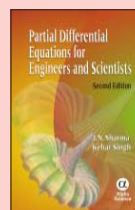
TEXTBOOK

*Partial Differential Equations for Engineers and Scientists* presents various well known mathematical techniques such as variable of separable method, integral transform techniques and Green's functions method, integral equations and numerical solutions to solve a number of mathematical problems. This comprehensive and compact text book, primarily designed for advanced undergraduate and postgraduate students in mathematics, physics and engineering is enriched with solved examples and supplemented with a variety of exercises at the end of each chapter. The knowledge of advanced calculus, Fourier series and some understanding about ordinary differential equations, finite differences as well as special functions are the prerequisites for the book.

Senior undergraduate and postgraduate students offering courses in partial differential equations, researchers, scientists and engineers working in R&D organisations would find the book to be most useful.

Audience: Senior Undergraduate – Postgraduate Students, Researchers, Scientists & Engineers

2009 354pp 32Figs. 160 x 240 675g Hb ISBN: 978-1-84265-410-1 £ 27.50 / US\$ 55.00



### **Techniques in Applied Mathematics**

Editors: *U. Basu, B. N. Mandal*

Audience: Postgraduate Students, Researchers & Teachers in Applied Mathematics, Theoretical Physics and Engineering

2007 252pp 185 x 240 700g Hb ISBN: 978-81-7319-806-9 £ 44.95 / US\$ 98.00

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*S. Puri*

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### **Principles of Electricity and Magnetism**

*S. Palit*

TEXTBOOK

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### **Principles of Modern Physics, *Second Edition***

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### **Solid State Physics: *Structure and Properties of Materials, Second Edition***

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TEXTBOOK

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2005 620pp. 453Figs. 51TbIs. 185 x 240 1400g Hb ISBN: 978-1-84265-218-3 £ 34.95 / US\$ 69.95

# CIVIL ENGINEERING

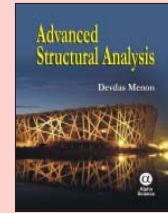
## Advanced Structural Analysis

Devdas Menon

NEW

TEXTBOOK

*Advanced Structural Analysis* is a textbook that essentially covers matrix analysis of structures, presented in a fresh and insightful way. This book is an extension of the author's basic book on Structural Analysis. The initial three chapters review the basic concepts in structural analysis and matrix algebra, and show how the latter provides an excellent mathematical framework for the former. The next three chapters discuss in detail and demonstrate through many examples how matrix methods can be applied to linear static analysis of skeletal structures (plane and space trusses; beams and grids; plane and space frames) by the stiffness method. Also, it is shown how simple structures can be conveniently solved using a reduced stiffness formulation, involving far less computational effort. The flexibility method is also discussed. Finally, in the seventh chapter, analysis of elastic instability and second-order response is discussed in detail. The main objective is to enable the student to have a good grasp of all the fundamental issues in these advanced topics in Structural Analysis, besides enjoying the learning process, and developing analytical and intuitive skills. With these strong fundamentals, the student will be well prepared to explore and understand further topics like Finite Elements Analysis.



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## Analysis of Water Distribution Networks

P. R. Bhave, R. Gupta

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Syed Danish Hasan

TEXTBOOK

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# CIVIL ENGINEERING

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Mohammed Ameen

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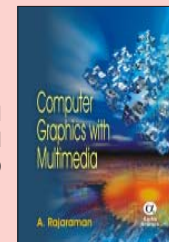
A. Rajaraman

TEXTBOOK

One of the major requisites in engineering system development is the role of graphics in presentation, communication and interaction with various groups involved in execution of the system from concept to maintenance. For engineers, who deal with computer integrated problem solving approaches, understanding graphics need a book that serves to bridge the gap of computer aspects and engineering requirements. This volume aims to fill this need.

Audience: Undergraduate & Postgraduate Students

2009 126 pp. 125Figs. 160 x 240 420g Hb ISBN: 978-1-84265-122-3 £ 19.95 / US\$ 39.95



## Current Trends in Engineering Practice

Editor: C. V. Ramakrishnan

Audience: Graduate, Postgraduate Students, Teachers & Professionals

2006 659 pp. 185 x 240 1400g Hb ISBN: 978-81-7319-689-8 £ 69.90 / US\$ 135.00

## Current Trends in Engineering Practice, Volume II

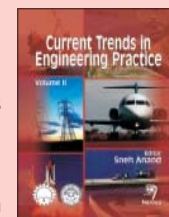
Editor: Sneh Anand

NEW

*Current Trends in Engineering Practice Volume II* deals with recent developments and practices adopted in various projects in different engineering disciplines and specializations - Rock Dredging; Concrete Technology; Grid Computing; Electric Propulsion & the Stationary Plasma Thruster; Turbocharging; Ultrafiltration, Nanofiltration & Reverse Osmosis; FACTS Devices; Sensors; Advanced Materials for Aircraft and Helicopters; Data Communication and Network Protocol; Satellite Communication Systems; Optoelectronic Devices; Wireless Communication; Applications of CFD Techniques in Aero-propulsive Characterization of Missiles; Hazardous Waste Management; Liquid Fueled SCRAMJET Combustors; Armour Materials and Designs; Heat Transfer in Nuclear Reactors; Defence Electronics Systems; World Class Manufacturing; Value Engineering & Engineering Ethics.

Audience: Graduate, Postgraduate Students, Teachers & Professionals

2010 738 pp. 384Figs. 75TbIs. 185 x 240 1350g Hb ISBN: 978-81-8487-019-0 £ 99.90 / US\$ 189.90



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N. P. Kurian

TEXTBOOK

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[www.alphasci.com](http://www.alphasci.com)

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USD Price valid for North America Only / GBP Price valid for Rest of the World

# CIVIL ENGINEERING

## Engineering Fluid Mechanics and Hydraulic Machines

K. C. Patra

FORTHCOMING

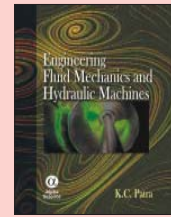
TEXTBOOK

CONTENTS: Preface / Introduction / Fluid Statics / Kinematics of Flow / Dynamics of Fluid Flow / Analysis of Pipe Flow / Flow Measurements / Dimensional Analysis and Model Testing / Drag Lift and Boundary Layer Flow / Compressible Fluid Flow / Open Channel Hydraulics / Hydraulic Machines / Objective Questions / Conversion Tables / References / Index.

Audience: Undergraduate and Postgraduate Students and Professionals

2011 550 pp. 185 x 240 Hb ISBN: 978-1-84265-534-4

£ 39.95 / US\$ 99.95



## Engineering Graphics, Third Edition

A. M. Chandra, S. Chandra

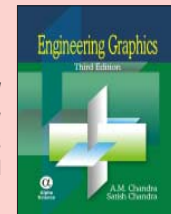
NEW

TEXTBOOK

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Audience: Students of Civil Engineering and CAD

2010 382 pp. 339Figs. 160 x 240 650g Hb ISBN: 978-1-84265-619-8 £ 49.95 / US\$ 89.95



## Finite Element Analysis and Programming: An Introduction

Shashishekar Shivaswamy

NEW

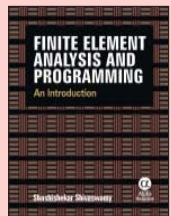
TEXTBOOK

*Finite Element Analysis* is a widely used technique in many engineering disciplines. Implementing the principles of FEA through programming is crucial for a thorough understanding of the subject. In this book, the concepts of FEA and its programming is illustrated uniquely in a transparent manner using the math package MATHCAD. The details in programming, with solution at various intermediate stages, are discussed for numerous elements with fully functional codes. Programs in Microsoft Excel using VBA are also presented. The book provides many challenging problems and programming assignments.

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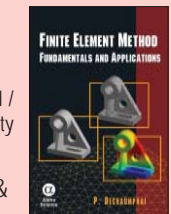
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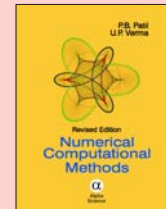
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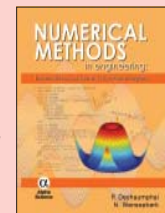
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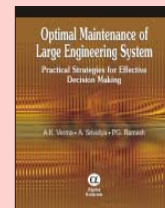
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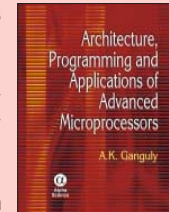
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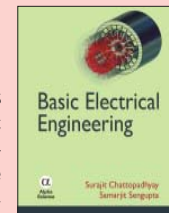
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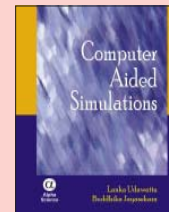
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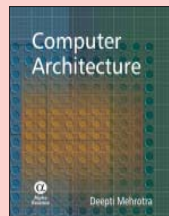
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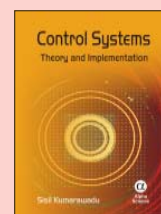
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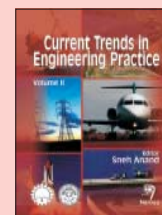
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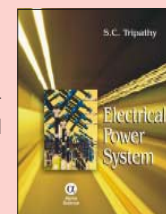
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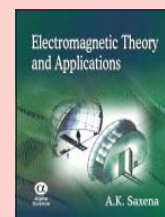
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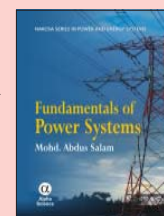
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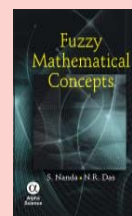
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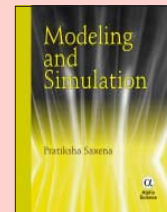
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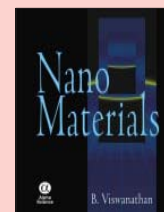
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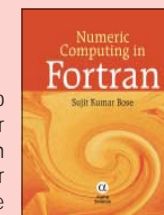
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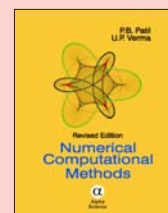
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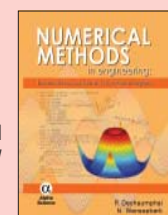
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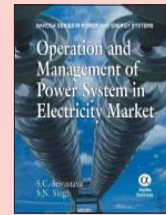
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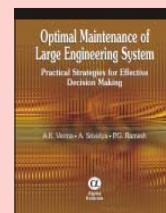
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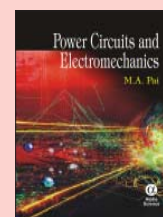
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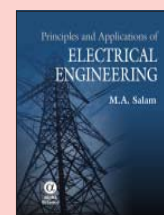
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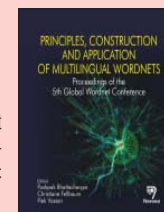
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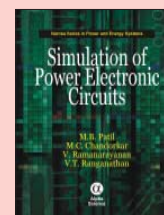
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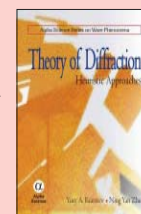
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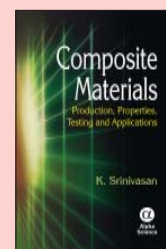
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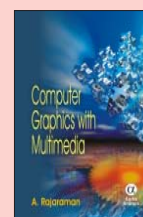
A. Rajaraman

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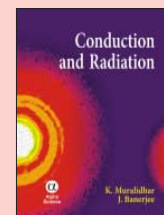
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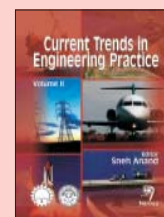
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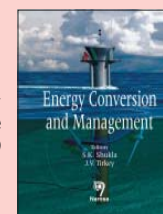
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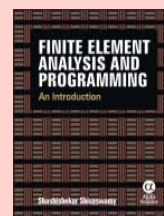
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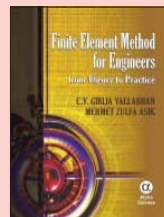
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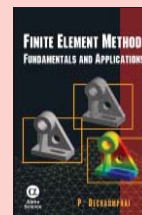
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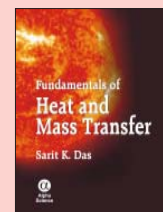
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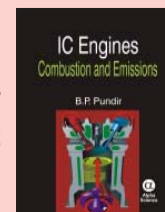
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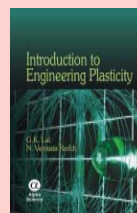
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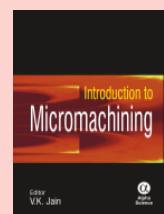
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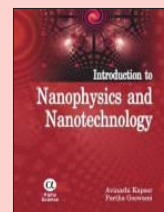
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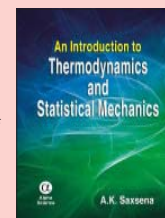
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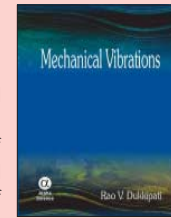
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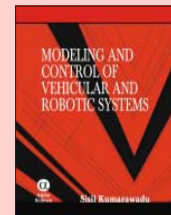
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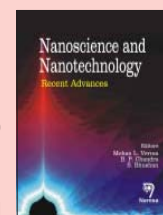
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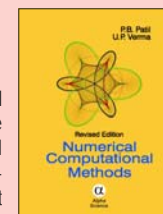
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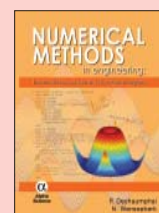
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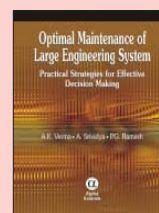
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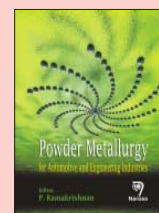
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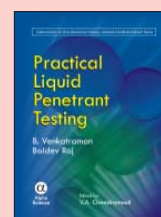
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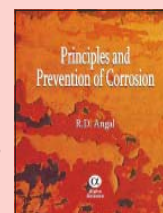
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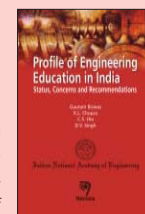
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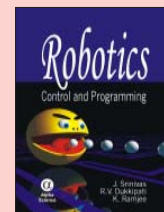
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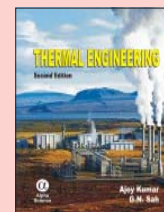
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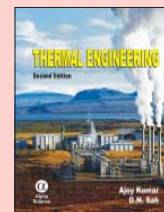
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