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# Modern Engineering Physics By Gupta

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A Textbook of Engineering Physics  
 Preparation, Properties, and Applications  
 A Comprehensive Approach to Experimentation, Modeling and Optimization  
 Essentials of Engineering Physics (RTU)  
 Machining of Hard Materials  
 Handbook of GaN Semiconductor Materials and Devices  
 MODERN PHYSICS FOR SCIENTISTS AND ENGINEERS  
 Methods, Models and Tools  
 Modern Engineering Mathematics  
 Basic Electrical Engineering (Be 104)  
 A Textbook of Engineering Physics (Kerala)  
 A TEXTBOOK OF ENGINEERING CHEMISTRY  
 Engineering Physics  
 Engineering Physics  
 Multiple Choice Questions in Physics  
 Modern Technologies for Creating the Thin-film Systems and Coatings  
 Physics for Engineers  
 Quantum Engineering of Low-Dimensional Nanoensembles  
 Modern Impact and Penetration Mechanics  
 Indian Books  
 Modern Hydrology and Sustainable Water Development  
 Nanopolymers and Modern Materials  
 A Textbook of Engineering Physics (Orissa)  
 Krishina's Engineering Physics; Volume III; Optics; 2001  
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## **YU SIERRA**

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*A Textbook of Engineering Physics* New Age International  
 Introduces Emerging Engineering Materials  
 Mechanical, materials, and production engineering students can greatly benefit from *Engineering Materials: Research, Applications and Advances*. This text focuses heavily on research, and fills a need for current information on the science, processes, and applications in the field. Beginning with a brief overview, the book provides a historical and modern perspective on material science, and describes various types of engineering materials. It examines the industrial process for emerging materials, determines practical use under a wide range of conditions, and establishes what

is needed to produce a new generation of materials. Covers Basic Concepts and Practical Applications The book consists of 18 chapters and covers a variety of topics that include functionally graded materials, auxetic materials, whiskers, metallic glasses, biocomposite materials, nanomaterials, superalloys, superhard materials, shape-memory alloys, and smart materials. The author outlines the latest advancements, including futuristic plastics, sandwich composites, and biodegradable composites, and highlights special kinds of composites, including fire-resistant composites, marine composites, and biomimetics. He also factors in current examples, future prospects, and the latest research underway in materials technology. Contains approximately 160 diagrams and 85 tables Incorporates examples, illustrations, and applications used in a variety of engineering disciplines

Includes solved numerical examples and objective questions with answers  
*Engineering Materials: Research, Applications and Advances* serves as a textbook and reference for advanced/graduate students in mechanical engineering, materials engineering, production engineering, physics, and chemistry, and relevant researchers and practicing professionals in the field of materials science.  
*Preparation, Properties, and Applications*  
 S. Chand Publishing  
 For the Students of B.E./B.Tech. of Rajasthan Technical University, Kota (Rajasthan). Many topics have been rearranged and many more examples have been included to make the various articles and examples more lucid and care has been taken to include all the examples that have been set in various university examinations.

*A Comprehensive Approach to Experimentation, Modeling and Optimization* S. Chand Publishing  
Covering the key theories, tools, and techniques of this dynamic field, *Handbook of Nanophysics: Principles and Methods* elucidates the general theoretical principles and measurements of nanoscale systems. Each peer-reviewed chapter contains a broad-based introduction and enhances understanding of the state-of-the-art scientific content through fundamental equations and illustrations, some in color. This volume explores the theories involved in nanoscience. It also discusses the properties of nanomaterials and nanosystems, including superconductivity, thermodynamics, nanomechanics, and nanomagnetism. In addition, leading experts describe basic processes and methods, such as atomic force microscopy, STM-based techniques, photopolymerization, photoisomerization, soft x-ray holography, and molecular imaging. Nanophysics brings together multiple disciplines to determine the structural, electronic, optical, and thermal behavior of nanomaterials; electrical and thermal conductivity; the forces between nanoscale objects; and the transition between classical and quantum behavior. Facilitating communication across many disciplines, this landmark publication encourages scientists with disparate interests to collaborate on interdisciplinary projects and incorporate the theory and methodology of other areas into their work.

*Essentials of Engineering Physics (RTU)*  
Krishna Prakashan Media

This book addresses applications of earthquake engineering for both offshore and land-based structures. It is self-contained as a reference work and covers a wide range of topics, including topics related to engineering seismology, geotechnical earthquake engineering, structural engineering, as well as special contents dedicated to design philosophy, determination of ground motions, shock waves, tsunamis, earthquake damage, seismic response of offshore and arctic structures, spatial varied ground motions, simplified and advanced seismic analysis methods, sudden subsidence of offshore platforms, tank liquid impacts during earthquakes, seismic resistance of non-structural elements, and various types of mitigation measures, etc. The target readership includes professionals in offshore and civil engineering, officials and regulators, as well as researchers and students in this field.

**Machining of Hard Materials** BoD – Books on Demand

The material of this book will derive its scientific under-pinning from basics of mathematics, physics, chemistry, geology, meteorology, engineering, soil science, and related disciplines and will provide sufficient breadth and depth of understanding in each sub-section of hydrology. It will start with basic concepts: Water, its properties, its movement, modelling and quality The distribution of water in space and time Water resource sustainability Chapters on 'global change' and 'water and ethics' aim respectively to emphasize the central role of hydrological cycle and its quantitative understanding and monitoring for human well being and to familiarize the readers with complex issues of equity and justice in large scale water resource development process. *Modern Hydrology for Sustainable Development* is intended not only as a textbook for students in earth and environmental science and civil engineering degree courses, but also as a reference for professionals in fields as diverse as environmental planning, civil engineering, municipal and industrial water supply, irrigation and catchment management.

*Handbook of GaN Semiconductor Materials and Devices* CRC Press

This book reports on new methodologies and important applications in the field of nanopolymers as well as includes the latest coverage of chemical databases and the development of new computational methods and efficient algorithms for chemical software and chemical engineering. The book provides an overview of the field, explains the basic underlying theory, and gives numerous comparisons of different methods. The new topics covered in this book will be an excellent resource for industries and academic researchers as well.

**MODERN PHYSICS FOR SCIENTISTS AND ENGINEERS** Springer Nature

Interference | Diffraction | Polarization | Lasers | Fiberoptics | Simple Harmonic Motion | Wave Motion| Ultrasonics And Acoustics | X-Rays | Electronicconfiguration | General Properties Of The Nucleus| Nuclear Models | Natural Radioactivity | Nuclearreactions And Artificial Radioactivity | Nuclear Fission Andfusion | Crystal Structure | Band Theory Of Solids| Metals, Insulators And Semiconductors | Magnetic Anddielectric Properties Of Materials | Maxwell's Equations| Matter Waves And Uncertainty Principle | Quantumtheory | Super-Conductivity | Statistics And Distributionlaws| Scalar And Vector Fields  
**Methods, Models and Tools** CRC Press

This well-received book, now in its fifth

edition, presents the subject matter in a pedagogically sound manner with focus on teaching problem-solving. The specific needs of these students have influenced the selection of topics for inclusion in the book. The book provides students with a solid understanding of the fundamental concepts with due emphasis on developing skills to solve exercise problems aimed at both testing and extending the knowledge of the students. Divided into 23 chapters, the book comprises topics on four major areas—mechanics, optics, electricity and electronics, and modern physics including quantum mechanics and lasers. In this fifth edition two new chapters on Acoustics and Heat and Thermodynamics are incorporated to widen the coverage and enhance the usefulness of this text. This book is intended for the undergraduate students of physics as well as for the first-year engineering students of several disciplines.

**Modern Engineering Mathematics** PHI Learning Pvt. Ltd.

This book is a compendium of fundamental mathematical concepts, methods, models, and their wide range of applications in diverse fields of engineering. It comprises essentially a comprehensive and contemporary coverage of those areas of mathematics which provide foundation to electronic, electrical, communication, petroleum, chemical, civil, mechanical, biomedical, software, and financial engineering. It gives a fairly extensive treatment of some of the recent developments in mathematics which have found very significant applications to engineering problems.

**Basic Electrical Engineering (Be 104)**

Krishna Prakashan Media

Brings the Band Structure of Carbon-Based Devices into the Limelight A shift to carbon is positioning biology as a process of synthesis in mainstream engineering. Silicon is quickly being replaced with carbon-based electronics, devices are being reduced down to nanometer scale, and further potential applications are being considered. While traditionally, engineers are trained by way of physics, chemistry, and mathematics, Nanoelectronics: Quantum Engineering of Low-Dimensional Nanoensembles establishes biology as an essential basic science for engineers to explore. Unifies Science and Engineering: from Quantum Physics to Nanoengineering Drawing heavily on published papers by the author, this research-driven text offers a complete review of nanoelectronic transport starting from quantum waves, to ohmic and ballistic conduction, and saturation-limited extreme nonequilibrium conditions. In

addition, it highlights a new paradigm using non-equilibrium Arora's Distribution Function (NEADF) and establishes this function as the starting point (from band theory to equilibrium to extreme nonequilibrium carrier statistics). The author focuses on nano-electronic device design and development, including carbon-based devices, and provides you with a vantage point for the global outlook on the future of nanoelectronics devices and ULSI. Encompassing ten chapters, this illuminating text: Converts the electric-field response of drift velocity into current-voltage relationships that are driven by the presence of critical voltage and saturation current arising from the unidirectional drift of carriers Applies the effect of these scaled-down dimensions to nano-MOSFET

(metal-oxide-semiconductor field-effect transistor) Considers specialized applications that can be tried through a number of suggested projects that are all feasible with MATLAB® codes Nanoelectronics: Quantum Engineering of Low-Dimensional Nanoensembles contains the latest research in nanoelectronics, identifies problems and other factors to consider when it comes to nanolayer design and application, and ponders future trends. Print Versions of this book also include access to the ebook version.

A Textbook of Engineering Physics (Kerala)  
Krishna Prakashan Media

Development of the thin film and coating technologies (TFCT) made possible the technological revolution in electronics and through it the revolution in IT and communications in the end of the twentieth century. Now, TFCT penetrated in many sectors of human life and industry: biology and medicine; nuclear, fusion, and hydrogen energy; protection against corrosion and hydrogen embrittlement; jet engine; space materials science; and many others. Currently, TFCT along with nanotechnologies is the most promising for the development of almost all industries. The 20 chapters of this book present the achievements of thin-film technology in many areas mentioned above but more than any other in medicine and biology and energy saving and energy efficiency.

#### **A TEXTBOOK OF ENGINEERING CHEMISTRY**

S. Chand Publishing  
This book presents an extensive collection of the recent findings and innovative research in the information system and knowledge engineering domain.

Knowledge engineering is a field within artificial intelligence that develops in particular systems that use knowledge, rather than data, to solve many computing

problems, that would usually require high levels of human expertise.

Engineering Physics Krishna Prakashan Media

Modern Engineering Physics S. Chand Publishing

**Engineering Physics** S. Chand Publishing  
This book "Nuclear Physics" has been written for Physics major students of all Indian universities. The subject matter has been thoroughly revised in accordance with the recent UGC syllabus meant for all Indian universities. In preparing the text, special care has been taken to present the topics in a coherent, simple and straightforward manner. SI units have been used throughout this book. Numerical problems are solved in each chapter wherever necessary for the better understanding of the subject. Exercises including problems have been given at the end of each chapter. Special care has been taken to explain the chapters on theory of relativity and quantum mechanics with illustrations, suitable examples and problems so that the students can understand relativity and quantum mechanics without difficulty.

#### **Multiple Choice Questions in Physics**

CRC Press  
Modern Physics for Scientists and Engineers provides thorough understanding of concepts and principles of Modern Physics with their applications. The various concepts of Modern Physics are arranged logically and explained in simple reader friendly language. For proper understanding of the subject, a large number of problems with their step-by-step solutions are provided for every concept. University problems have been included in all chapters. A set of theoretical, numerical and multiple choice questions at the end of each chapter will help readers to understand the subject. This textbook covers broad variety of topics of interest in Modern Physics: The Special Theory of Relativity, Quantum Mechanics (Dual Nature of Particle as well as Schrödinger's Equations with Applications), Atomic Physics, Molecular Physics, Nuclear Physics, Solid State Physics, Superconductivity, X-Rays, Lasers, Optical Fibres, and Motion of Charged Particle in Electromagnetic Fields. The book is designed as a textbook for the undergraduate students of science and engineering.

#### **Modern Technologies for Creating the Thin-film Systems and Coatings**

S. Chand Publishing  
Indispensable treatise on the mechanics of extreme dynamic events, including impact, shocks, penetration and high-rate material response.

**Physics for Engineers** Walter de Gruyter GmbH & Co KG

A Textbook of workshop Technology (Manufacturing Processes) to the students of degree and diploma of all the Indian and foreign universities. The object of this book is to present the subject matter in a most concise, compact, to the point and lucid manner. While writing the book, we have constantly kept in mind the various requirements of the students. No effort has been spared to enrich the book with simple language and self-explanatory diagrams. Every care has been taken not to make the book voluminous, as the students have also to face other subjects of equal importance.

#### **Quantum Engineering of Low-Dimensional Nanoensembles**

New Age International  
The Book Presents A Comprehensive Treatment Of Quantum Mechanics At The Post Graduate Level. The Emphasis Is On The Physical Foundations And The Mathematical Framework Of Quantum Mechanics; Applications To Specific Problems Are Taken Up Only To Illustrate A Principle Or A Calculational Technique Under Discussion. The Book Begins With A Preview Of The Conceptual Problem Peculiar To Quantum Mechanics. The Introductory Chapter Also Contains A Formulation Of The Basic Laws Of Motion In Quantum Mechanics In Terms Of The Feynman Postulates. Chapter 2 Contains A Detailed Exposition Of The Linear Vector Spaces And Representation Theory. In Chapter 3 The Basic Principles Of Quantum Mechanics Are Introduced In The Form Of A Number Of Postulates. The Schrodinger, The Heisenberg And The Interaction Pictures Of Time Development Form The Subject Matter Of Chapter 4. An Indepth Study Of Angular Momentum Theory (Chapter 5) Is Followed By A Brief Account Of Space-Time Symmetries Including Time Reversal Invariance (Chapter 6). Scattering Theory (Chapter 7), Approximation Methods For Stationary As Well As Time-Dependent Problems (Chapter 8) And Identical Particles (Chapter 9) Receive Adequate Treatment. The Dirac, The Klein-Gordon And The Weyl Equations Are Discussed Extensively In Chapter 10. Chapter 11 Treats Canonical Quantization Of Both Non- Relativistic And Relativistic Fields; Topics Covered Include The Natural System Of Units, The Dyson And The Wick Chronological Products, Normal Products, Wicks Theorem And The Feynman Diagrams. The Last Chapter (12) Discusses In Detail The Interpretational Problem In Quantum Mechanics. The Epr Paradox, The Copenhagen And The

Ensemble Interpretations, Hidden-Variable Theories, Neumanns And Bell S Theorems And Bells Inequality Are Among The Topics Discussed. The Appendices Incorporate A Detailed Discussion Of Matrices Both Finite-And-Infinite Dimensional, Antilinear Operators, Dirac Delta Function And Fourier Transforms. A Number Of Problems Are Included With A View To Supplementing The Text.

Modern Impact and Penetration Mechanics  
CRC Press

Any good text book, particularly that in the fast changing fields such as engineering &

technology, is not only expected to cater to the current curricular requirements of various institutions but also should provide a glimpse towards the latest developments in the concerned subject and the relevant disciplines. It should guide the periodic review and updating of the curriculum.

**Indian Books** The Electrochemical Society

Computational Science and Engineering contains peer-reviewed research presented at the International Conference

on Computational Science and Engineering (RCC Institute of Information Technology, Kolkata, India, 4-6 October 2016). The contributions cover a wide range of topics:  
- electronic devices - photonics - electromagnetics - soft computing - artificial intelligence - modern communication systems Focussing on strong theoretical and methodological approaches and applications, Computational Science and Engineering will be of interest to academia and professionals involved or interested in the above mentioned domains.

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