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ENGINEERING PHYSICS, Third Edition

PHI Learning Pvt. Ltd. This book, now in its Third Edition, is designed as a textbook for first-year undergraduate engineering students. It covers all the relevant and vital topics, lucidly and straightforwardly. This book emphasizes the basic concept of physics for engineering students. It covers the topics like properties of matter, acoustics, ultrasonics with their industrial and medical applications, quantum physics, lasers along with their industrial and medical applications, fibre optics with its uses in optical communication and fibre optic sensors, wave optics, crystal physics, and imperfection in solids. This book contains numerous solved problems, short and descriptive type questions and exercise problems. It will help students assess their progress and familiarize them with the types of questions set in examinations. **NEW TO THIS EDITION** • New chapters on 1. Wave Motion 2. Imperfection in solids • New sections on 1. Inadequacy of classical mechanics 2. Heisenberg's uncertainty principle 3. Principles of superposition of matter waves 4. Wave packets 5. Three-dimensional potential well problem 6. Fotonic pressure sensor 7. Noise and their remedies **TARGET AUDIENCE** B.E./B.Tech (all branches of engineering)

Textbook Of Engineering Physics -

PHI Learning Pvt. Ltd.

Engineering Physics

PHI Learning Pvt. Ltd.

CONCEPTS OF MODERN PHYSICS.

Handbook of Research on Diverse Applications of Nanotechnology in Biomedicine, Chemistry, and Engineering

IGI Global As a paradigm for the future, micro-scale technology seeks to fuse revolutionary concepts in science and engineering and then translate it into reality. Nanotechnology is an interdisciplinary field that aims to connect what is seen with the naked eye and what is unseen on the molecular level. The Handbook of Research on Diverse Applications of Nanotechnology in Biomedicine, Chemistry, and Engineering examines the strengths and future potential of micro-scale technologies in a variety of industries. Highlighting the benefits, shortcomings, and emerging perspectives in the application of nano-scale technologies, this book is a comprehensive reference source for synthetic chemists, engineers, graduate students, and researchers with an interest in the multidisciplinary applications, as well as the ongoing research in the field.

PHYSICS FOR ENGINEERS

PHI Learning Pvt. Ltd. Physics for Engineers is designed to serve as a text for the first course in physics for engineering students of most of the technical universities in India. It can also be used as an introductory text for science graduates. This book, now in its Second Edition, is updated as per the feedback received from the students and faculties. Quite a number of topics have been either revised or updated, of course, maintaining flow and presentation of the book. The present approach is more focused and provides a clear, precise and accessible coverage of fundamentals of physics through succinct presentation, logical organization, and sound pedagogical order. Extensive care has been taken to apprise the students regarding the applied aspects of the concepts in physics. Most of the complex ideas are supported by explanatory figures to make the underlying concepts easy to understand and grasp. At the end of each chapter, numerous short answer questions, multiple choice questions and solved problems are included to brush up the chapter fast, quickly and effectively especially before exams. **NEW TO THIS EDITION** • Several new Short Questions and Solved Problems are added. • Some of the chapters are redesigned to make it more comprehensive and informative. • New topics have been added in Chapters 1, 3, 4, 9, 11, 17, 18 and 19. • A new appendix on Lorentz Force Equation is also included.

Nanostructured Zinc Oxide

Synthesis, Properties and Applications

Elsevier Nanostructured Zinc Oxide covers the various routes for the synthesis of different types of nanostructured zinc oxide including; 1D (nanorods, nanowires etc.), 2D and 3D (nanosheets, nanoparticles, nanospheres etc.). This comprehensive overview provides readers with a clear understanding of the various parameters controlling morphologies. The book also reviews key properties of ZnO including optical, electronic, thermal, piezoelectric and surface properties and techniques in order to tailor key properties. There is a large emphasis in the book on ZnO nanostructures and their role in optoelectronics. ZnO is very interesting and widely investigated material for a number of applications. This book presents up-to-date information about the ZnO nanostructures-based applications such as gas sensing, pH sensing, photocatalysis, antibacterial activity, drug delivery, and electrodes for optoelectronics. Reviews methods to synthesize, tailor, and characterize 1D, 2D, and 3D zinc oxide nanostructured materials Discusses key properties of zinc oxide nanostructured materials including optical, electronic, thermal, piezoelectric, and surface properties Addresses most relevant zinc oxide applications in optoelectronics such as light-emitting diodes, solar cells, and sensors

ICOL-2019

Proceedings of the International Conference on Optics and Electro-Optics, Dehradun, India

[Springer Nature](#) This book presents peer-reviewed articles from the International Conference on Optics and Electro-optics, ICOL-2019, held at Dehradun in India. It brings together leading researchers and professionals in the field of optics/optical engineering/optical materials and provides a platform to present and establish collaborations in this important area, with the theme "Trends in Electro-optics Instrumentation for Strategic Applications". Topics covered but not limited to are Optical Engineering, Optical Thin Films, Optical Materials, IR Sensors, Image Processing & Systems, Photonic Band Gap Materials, Adaptive Optics, Optical Image Processing & Holography, Lasers, Fiber Lasers & its Applications, Diffractive Optics, Innovative packaging of Optical Systems, Nanophotonics Devices and Applications, Optical Interferometry & Metrology, Terahertz, Millimeter Wave & Microwave Photonics, Fiber, Integrated & Nonlinear Optics and Optics and Electro-optics for Strategic Applications.

Silica-based Organic-inorganic Hybrid Nanomaterials: Synthesis, Functionalization And Applications In The Field Of Catalysis

[World Scientific](#) Currently the field of nanocatalysis is undergoing many exciting developments and the design of silica-based organic-inorganic hybrid nanocatalysts is a key focus of the researchers working in this field. This book aims to present a succinct overview of the recent research progress directed towards the fabrication of silica-based organic-inorganic hybrid catalytic systems encompassing the key advantages of silica nanoparticles and silica-coated magnetic nanoparticles in an integrated manner. Featuring comprehensive descriptions of almost all approaches utilized for the synthesis of nanomaterials including some latest techniques such as flow and microwave-assisted synthesis that enable large-scale synthesis, it proves useful not only to academics but also industrialists. It also includes a systematic discussion on the vital characterization techniques employed for authenticating the structure of these. The title also offers an enormous amount of knowledge about the fusion of nanotechnology with green chemistry that strives to meet the scientific challenges of protecting human health and the environment.

The Physics of Semiconductor Devices

Proceedings of IWPSD 2017

[Springer](#) This book disseminates the current knowledge of semiconductor physics and its applications across the scientific community. It is based on a biennial workshop that provides the participating research groups with a stimulating platform for interaction and collaboration with colleagues from the same scientific community. The book discusses the latest developments in the field of III-nitrides; materials & devices, compound semiconductors, VLSI technology, optoelectronics, sensors, photovoltaics, crystal growth, epitaxy and characterization, graphene and other 2D materials and organic semiconductors.

Applied Physics

Nanomaterials for Water Remediation

[Walter de Gruyter GmbH & Co KG](#) The capability to generate potable water from polluted sources is growing in importance as pharmaceuticals, microplastics and waste permeate our soil. Nanotechnology allows for improvements in water remediation technologies by taking advantage of the unique properties of materials at this small scale.

Higher Mathematics for Physics and Engineering

[Springer Science & Business Media](#) Due to the rapid expansion of the frontiers of physics and engineering, the demand for higher-level mathematics is increasing yearly. This book is designed to provide accessible knowledge of higher-level mathematics demanded in contemporary physics and engineering. Rigorous mathematical structures of important subjects in these fields are fully covered, which will be helpful for readers to become acquainted with certain abstract mathematical concepts. The selected topics are: - Real analysis, Complex analysis, Functional analysis, Lebesgue integration theory, Fourier analysis, Laplace analysis, Wavelet analysis, Differential equations, and Tensor analysis. This book is essentially self-contained, and assumes only standard undergraduate preparation such as elementary calculus and linear algebra. It is thus well suited for graduate students in physics and engineering who are interested in theoretical backgrounds of their own fields. Further, it will also be useful for mathematics students who want to understand how certain abstract concepts in mathematics are applied in a practical situation. The readers will not only acquire basic knowledge toward higher-level mathematics, but also imbibe mathematical skills necessary for contemporary studies of their own fields.

A Complete Course in Physics (Graphs)

[Lulu.com](#)

From Atoms to Higgs Bosons

Voyages in Quasi-Spacetime

[CRC Press](#) The announcement in 2012 that the Higgs boson had been discovered was understood as a watershed moment for the Standard Model of particle physics. It was deemed a triumphant event in the reductionist quest that had begun centuries ago with the ancient Greek natural philosophers. Physicists basked in the satisfaction of explaining to the world that the ultimate cause of mass in our universe had been unveiled at CERN, Switzerland. The Standard Model of particle physics is now understood by many to have arrived at a satisfactory description of entities and interactions on the smallest physical scales: elementary quarks, leptons, and intermediary gauge bosons residing within a four-dimensional spacetime continuum. Throughout the historical journey of reductionist physics, mathematics has played an increasingly dominant role. Indeed, abstract mathematics has now become indispensable in guiding our discovery of the physical world. Elementary particles are endowed with abstract existence in accordance with their appearance in complicated equations. Heisenberg's uncertainty principle, originally intended to estimate practical measurement uncertainties, now bequeaths a numerical fuzziness to the structure of reality. Particle physicists have borrowed effective mathematical tools originally invented and employed by condensed matter physicists to approximate the complex structures and dynamics of solids and liquids and bestowed on them the authority to define basic physical reality. The discovery of the Higgs boson was a result of these kinds of strategies, used by particle physicists to take the latest steps on the reductionist quest. This book offers a constructive critique of the modern orthodoxy into which all aspiring young physicists are now trained, that the ever-evolving mathematical models of modern

physics are leading us toward a truer understanding of the real physical world. The authors propose that among modern physicists, physical realism has been largely replaced—in actual practice—by quasirealism, a problematic philosophical approach that interprets the statements of abstract, effective mathematical models as providing direct information about reality. History may judge that physics in the twentieth century, despite its seeming successes, involved a profound deviation from the historical reductionist voyage to fathom the mysteries of the physical universe.

Optical and Wireless Technologies

Proceedings of OWT 2017

Springer This book presents selected papers from 1st International Conference on Optical and Wireless Technologies, providing insights into the analytical, experimental, and developmental aspects of systems, techniques, and devices in these spheres. It explores the combined use of various optical and wireless technologies in next-generation networking applications, and discusses the latest developments in applications such as photonics, high-speed communication systems and networks, visible light communication, nanophotonics, and wireless and multiple-input-multiple-output (MIMO) systems. The book will serve as a valuable reference resource for academics and researchers across the globe.

Discover Your Dharma

Lulu.com It is an age-old belief that when we grow up, we will wake up one morning, and voila! we will know our life purpose. Yet, we are all grown up, working like a dog, tired to the bone, and still no life purpose in sight! The truth is our life purpose is actually our dharma - taking the right action as it presents itself. In this book, you will find the Secrets to knowing exactly what to do with your life. Designed especially for you, the modern dharma seeker, Discover Your Dharma provides a uniquely practical and innovative process to guide you through your journey of discovery. Begin it now!

Chemical Functionalization of Carbon Nanomaterials

Chemistry and Applications

CRC Press Carbon-based nanomaterials are rapidly emerging as one of the most fascinating materials in the twenty-first century. Chemical Functionalization of Carbon Nanomaterials: Chemistry and Applications provides a thorough examination of carbon nanomaterials, including their variants and how they can be chemically functionalized. It also gives a comprehensive overview of current advanced applications of functionalized carbon nanomaterials, including the automotive, packaging, coating, and biomedical industries. The book covers modern techniques to characterize chemically functionalized carbon nanomaterials as well as characterization of surface functional groups. It includes contributions from international leaders in the field who highlight the multidisciplinary and interdisciplinary flexibility of functionalized carbon nanomaterials. The book illustrates how natural drawbacks to carbon nanomaterials, such as low solubility, can be countered by surface modifications and shows how to make modifications. It discusses developments in the use of carbon nanomaterials in several critical areas in scientific research and practice, including analytical chemistry, drug delivery, and water treatment. It explores market opportunities due to the versatility and increasing applicability of carbon nanomaterials. It also gives suggestions on the direction of the field from its current point, paving the way for future developments and finding new applications. Chemical Functionalization of Carbon Nanomaterials: Chemistry and Applications is a significant collection of findings in a rapidly developing field. It gives an in-depth look at the current achievements of research and practice while pointing you ahead to new possibilities in functionalizing and using carbon nanomaterials.

Principles of Lasers

Springer This book is the result of more than ten years of research and teaching in the field of quantum electronics. The purpose of the book is to introduce the principles of lasers, starting from elementary notions of quantum mechanics and electromagnetism. Because it is an introductory book, an effort has been made to make it self contained to minimize the need for reference to other works. For the same reason; the references have been limited (whenever possible) either to review papers or to papers of seminal importance. The organization of the book is based on the fact that a laser can be thought of as consisting of three elements: (i) an active material, (ii) a pumping system, and (iii) a suitable resonator. Accordingly, after an introductory chapter, the next three chapters deal, respectively, with the interaction of radiation with matter, pumping processes, and the theory of passive optical resonators.

Bio- and Nanosorbents from Natural Resources

Springer This book reviews the work in the field of nanoadsorbents derived from natural polymers, with a special emphasis on materials finding application in water remediation. It includes natural materials both with an organic or an inorganic skeleton, from which the nanomaterials can be made. Those nanomaterials can therefore be used to reinforce other matrices and in their pristine form have an extraordinary adsorption efficiency. Being of natural or biological origin, the materials described in this book distinguish themselves as eco-friendly and non-toxic. The book describes how these benefits of the described materials can be combined and exploited. It will thus appeal to chemists, nanotechnologists, environmental engineers and generally all scientist working in the field of water pollution and remediation as an inspiration for the innovation toward new technologies.

NUCLEAR PHYSICS: PROBLEM-BASED APPROACH INCLUDING MATLAB

PHI Learning Pvt. Ltd. The book presents a coherent and in-depth treatment of all the important topics on nuclear physics with up-to-date notions and viewpoints. It starts with the discussion on general properties of nucleus, and then moves on to give insights into nuclear models, radioactivity and its applications, nuclear force and nuclear reactions. Readers are also introduced with the concept of interaction of radiation with matter, and detectors including particle accelerators from a practical rather a theoretical point of view. A separate chapter has been devoted to particle physics along with the latest developments. The book also presents an overview of the applications of nuclear physics to various fields such as nuclear energy, healthcare, industry and environment. The evolution of the universe along with the primordial and the stellar nucleosynthesis has been discussed in the last chapter. The book is designed as a standard text for the undergraduate and postgraduate students of Physics.

Handbook of Universities

Atlantic Publishers & Dist The Most Authentic Source Of Information On Higher Education In India The Handbook Of Universities, Deemed Universities, Colleges, Private Universities And Prominent Educational & Research Institutions Provides Much Needed Information On Degree And Diploma Awarding Universities And Institutions Of National Importance That Impart General, Technical And Professional Education In India. Although Another Directory Of Similar Nature Is Available In The Market, The Distinct Feature Of The Present Handbook, That Makes It One Of Its Kind, Is That It Also Includes Entries And Details Of The Private Universities Functioning Across The Country. In This Handbook, The Universities Have Been Listed In An Alphabetical Order. This Facilitates Easy Location Of Their Names. In Addition To The Brief History Of These Universities, The Present Handbook Provides The Names Of Their Vice-Chancellor, Professors And Readers As Well As Their Faculties And Departments. It Also Acquaints The Readers With The Various Courses Of Studies Offered By Each University. It Is Hoped That The Handbook In Its Present Form, Will Prove Immensely Helpful To The Aspiring Students In Choosing The Best Educational Institution For Their Career Enhancement. In Addition, It Will Also Prove Very Useful For The

Publishers In Mailing Their Publicity Materials. Even The Suppliers Of Equipment And Services Required By These Educational Institutions Will Find It Highly Valuable.

Proceedings of International Conference on Trends in Computational and Cognitive Engineering

TCCE 2019

[Springer Nature](#) This book presents various computational and cognitive modeling approaches in the areas of health, education, finance, the environment, engineering, commerce and industry. Gathering selected conference papers presented at the International Conference on Trends in Computational and Cognitive Engineering (TCCE), it shares cutting-edge insights and ideas from mathematicians, engineers, scientists and researchers and discusses fresh perspectives on problem solving in a range of research areas.

B.Sc. Practical Physics

[S. Chand Publishing](#) B.Sc. Practical Physics

Nanotechnology for Energy and Environmental Engineering

[Springer Nature](#) This book examines the potential applications of nanoscience and nanotechnology to promote eco-friendly processes and techniques for energy and environment sustainability. Covering various aspects of both the synthesis and applications of nanoparticles and nanofluids for energy and environmental engineering, its goal is to promote eco-friendly processes and techniques. Accordingly, the book elaborates on the development of reliable, economical, eco-friendly processes through advanced nanoscience and technological research and innovations. Gathering contributions by researchers actively engaged in various domains of nanoscience and technology, it addresses topics such as nanoparticle synthesis (both top-down and bottom-up approaches); applications of nanomaterials, nanosensors and plasma discharge in pollution control; environmental monitoring; agriculture; energy recovery; production enhancement; energy conservation and storage; surface modification of materials for energy storage; fuel cells; pollution mitigation; and CO₂ capture and sequestration. Given its scope, the book will be of interest to academics and researchers whose work involves nanotechnology or nanomaterials, especially as applied to energy and/or environmental sustainability engineering. Graduate students in the same areas will also find it a valuable resource.

MODERN PHYSICS FOR SCIENTISTS AND ENGINEERS

[PHI Learning Pvt. Ltd.](#) 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.

Green Functionalized Nanomaterials for Environmental Applications

[Elsevier](#) Green nanomaterials are classed as nanomaterials with no environmentally harmful, toxic, properties. The photocatalysis of nanomaterials involves photo-conduction value in efficient removal/degradation of noxious pollutants. Green nanotechnology has objectives for the development of products and processes which are environmentally friendly, economically sustainable, safe, energy-efficient, and produce little waste or emissions. Such products and processes are based on renewable materials and/or have a low net impact on the environment. Green functionalized nanomaterials, formed by a combination of nanomaterials with natural materials or are derived through a green source, are the new trends in the remediation of pollutants in environmental industries. This has the effect of making photoactive nanomaterials work under UV/sunlight radiation in order to produce reactive radical species that rapidly remove pollutants by redox mechanism. Green Functionalized Nanomaterials for Environmental Applications focuses on recent developments in the area of fabrication of green nanomaterials and their properties. It also looks at ways of lowering the risk of exposure of green functionalized nanomaterials. This needs to be pursued in the future for investigating and assessing health risks, which may be due to exposure to green nanomaterials. It is an important reference source for all those seeking to improve their understanding of how green functionalized nanomaterials are being used in a range of environmental applications, as well as considering potential toxicity implications. Highlights innovative industrial technologies for green functionalized nanomaterials Covers major fabrication techniques for sustainable functionalized nanomaterials Shows how sustainable functionalized nanomaterials are being developed for commercial applications

Special Report

NEERI Annual Report

Laser Fundamentals

[Cambridge University Press](#) Laser Fundamentals provides a clear and comprehensive introduction to the physical and engineering principles of laser operation and design. Simple explanations, based throughout on key underlying concepts, lead the reader logically from the basics of laser action to advanced topics in laser physics and engineering. Much new material has been added to this second edition, especially in the areas of solid-state lasers, semiconductor lasers, and laser cavities. This 2004 edition contains a new chapter on laser operation above threshold, including extensive discussion of laser amplifiers. The clear explanations, worked examples, and many homework problems will make this book invaluable to undergraduate and first-year graduate students in science and engineering taking courses on lasers. The summaries of key types of lasers, the use of many unique theoretical descriptions, and the extensive bibliography will also make this a valuable reference work for researchers.

A Textbook of Engineering Physics

[S. Chand Publishing](#) A Textbook of Engineering Physics is written with two distinct objectives: to provide a single source of information for engineering undergraduates of different specializations and provide them a solid base in physics. Successive editions of the book incorporated topics as required by students pursuing their studies in various universities. In this new edition the contents are fine-tuned, modernized and updated at various stages.

Energy Storage and Conversion Devices

Supercapacitors, Batteries, and Hydroelectric Cells

CRC Press This book presents a state-of-the-art overview of the research and development in designing electrode and electrolyte materials for Li-ion batteries and supercapacitors. Further, green energy production via the water splitting approach by the hydroelectric cell is also explored. Features include: • Provides details on the latest trends in design and optimization of electrode and electrolyte materials with key focus on enhancement of energy storage and conversion device performance • Focuses on existing nanostructured electrodes and polymer electrolytes for device fabrication, as well as new promising research routes toward the development of new materials for improving device performance • Features a dedicated chapter that explores electricity generation by dissociating water through hydroelectric cells, which are a nontoxic and green source of energy production • Describes challenges and offers a vision for next-generation devices This book is beneficial for advanced students and professionals working in energy storage across the disciplines of physics, materials science, chemistry, and chemical engineering. It is also a valuable reference for manufacturers of electrode/electrolyte materials for energy storage devices and hydroelectric cells.

Understanding Engineering Mathematics

Routledge Studying engineering, whether it is mechanical, electrical or civil relies heavily on an understanding of mathematics. This new textbook clearly demonstrates the relevance of mathematical principles and shows how to apply them to solve real-life engineering problems. It deliberately starts at an elementary level so that students who are starting from a low knowledge base will be able to quickly get up to the level required. Students who have not studied mathematics for some time will find this an excellent refresher. Each chapter starts with the basics before gently increasing in complexity. A full outline of essential definitions, formulae, laws and procedures are introduced before real world situations, practicals and problem solving demonstrate how the theory is applied. Focusing on learning through practice, it contains examples, supported by 1,600 worked problems and 3,000 further problems contained within exercises throughout the text. In addition, 34 revision tests are included at regular intervals. An interactive companion website is also provided containing 2,750 further problems with worked solutions and instructor materials

Programming .NET Components

Design and Build .NET Applications Using Component-Oriented Programming

"O'Reilly Media, Inc." 'Programming .NET Components', second edition, updated to cover .NET 2.0., introduces the Microsoft .NET Framework for building components on Windows platforms. From its many lessons, tips, and guidelines, readers will learn how to use the .NET Framework to program reusable, maintainable, and robust components.

Theory of Machines

S. Chand Publishing While writing the book, we have continuously kept in mind the examination requirements of the students preparing for U.P.S.C.(Engg. Services) and A.M.I.E.(I) examinations. In order to make this volume more useful for them, complete solutions of their examination papers up to 1975 have also been included. Every care has been taken to make this treatise as self-explanatory as possible. The subject matter has been amply illustrated by incorporating a good number of solved, unsolved and well graded examples of almost every variety.

Proceedings of International Conference on Data Science and Applications

ICDSA 2021, Volume 2

Springer Nature

Healthy Buildings

How Indoor Spaces Drive Performance and Productivity

A healthy building does more than conserve resources: it improves the health and productivity of the people inside. Joseph Allen and John Macomber look at everything from the air we breathe to the water we drink to how light, sound, and materials impact our performance and wellbeing and drive business profit.

Renewable Energy Systems

Modelling, Optimization and Control

Academic Press **Renewable Energy Systems: Modelling, Optimization and Control** aims to cross-pollinate recent advances in the study of renewable energy control systems by bringing together diverse scientific breakthroughs on the modeling, control and optimization of renewable energy systems by leading researchers. The book brings together the most comprehensive collection of modeling, control theorems and optimization techniques to help solve many scientific issues for researchers in renewable energy and control engineering. Many multidisciplinary applications are discussed, including new fundamentals, modeling, analysis, design, realization and experimental results. The book also covers new circuits and systems to help researchers solve many nonlinear problems. This book fills the gaps between different interdisciplinary applications, ranging from mathematical concepts, modeling, and analysis, up to the realization and experimental work. Covers modeling, control theorems and optimization techniques which will solve many scientific issues for researchers in renewable energy. Discusses many multidisciplinary applications with new fundamentals, modeling, analysis, design, realization and experimental results. Includes new circuits and systems, helping researchers solve many nonlinear problems

Computational Intelligence Techniques and Their Applications to Software Engineering Problems

[CRC Press](#) **Computational Intelligence Techniques and Their Applications to Software Engineering Problems** focuses on computational intelligence approaches as applicable in varied areas of software engineering such as software requirement prioritization, cost estimation, reliability assessment, defect prediction, maintainability and quality prediction, size estimation, vulnerability prediction, test case selection and prioritization, and much more. The concepts of expert systems, case-based reasoning, fuzzy logic, genetic algorithms, swarm computing, and rough sets are introduced with their applications in software engineering. The field of knowledge discovery is explored using neural networks and data mining techniques by determining the underlying and hidden patterns in software data sets. Aimed at graduate students and researchers in computer science engineering, software engineering, information technology, this book: Covers various aspects of in-depth solutions of software engineering problems using computational intelligence techniques Discusses the latest evolutionary approaches to preliminary theory of different solve optimization problems under software engineering domain Covers heuristic as well as meta-heuristic algorithms designed to provide better and optimized solutions Illustrates applications including software requirement prioritization, software cost estimation, reliability assessment, software defect prediction, and more Highlights swarm intelligence-based optimization solutions for software testing and reliability problems

Carbon Nanomaterials and their Nanocomposite-Based Chemiresistive Gas Sensors

Applications, Fabrication and Commercialization

[Elsevier](#) **Carbon Nanomaterials and their Nanocomposite-Based Chemiresistive Gas Sensors: Applications, Fabrication and Commercialization** sets out how carbon nanomaterials based chemiresistive gas sensor are made, and their applications at lab and industrial levels. The book focuses on major advances in the field of chemiresistive gas sensors in recent years and their potential applications in environmental