

## Navneet Gupta Engineering Physics

Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012) Coal and Biomass Gasification Analog Communication Systems International Books in Print Electromagnetic Metamaterials General Pediatrics Board Review Advanced Electrical and Electronics Materials Proceedings of the Indian Science Congress Advances in Mechanical Engineering Antenna and Wave Propagation The Physics of Semiconductor Devices Sustainable Materials for Next Generation Energy Devices Animal Models of Neurological Disorders Metamaterials with Negative Parameters Tamasha in Bandergaon Advances in Signal Processing and Communication Sensors and Biosensors, MEMS Technologies and its Applications Fundamentals of Electrical Engineering Advances in Hard-to-Cut Materials Modelling, Simulation and Intelligent Computing Advanced Automotive Electricity and Electronics Materials Forming, Machining and Post Processing Recent Trends in Materials and Devices Textbook of Neurology Handbook of Neurological Examination Proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing Advances in System Optimization and Control Electronic Switching Commonwealth Universities Yearbook Advances in Interdisciplinary Engineering Multiscale Modelling of Advanced Materials Algorithms Technology and Applications of Amorphous Silicon Three Decades of HIV/AIDS in Asia Proceedings of International Conference in Mechanical and Energy Technology Engineering Physics (Annual Pattern) I Am a Troll Advanced level physics Pratiyogita Darpan Engineering Materials

### **Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA 2012)**

Electromagnetic metamaterials—from fundamental physics to advanced engineering applications This book presents an original generalized transmission line approach associated with non-resonant structures that exhibit larger bandwidths, lower loss, and higher design flexibility. It is based on the novel concept of composite right/left-handed (CRLH) transmission line metamaterials (MMs), which has led to the development of novel guided-wave, radiated-wave, and refracted-wave devices and structures. The authors introduced this powerful new concept and are therefore able to offer readers deep insight into the fundamental physics needed to fully grasp the technology. Moreover, they provide a host of practical engineering applications. The book begins with an introductory chapter that places resonant type and transmission line metamaterials in historical perspective. The next six chapters give readers a solid foundation in the fundamentals and practical applications: Fundamentals of LH MMs describes the fundamental physics and exotic properties of left-handed metamaterials TL Theory of MMs establishes the foundations of CRLH structures in three progressive steps: ideal transmission line, LC network, and real distributed structure Two-Dimensional MMs develops both a transmission matrix method and a transmission line method to address the problem of finite-size 2D metamaterials excited by arbitrary sources

Guided-Wave Applications and Radiated-Wave Applications present a number of groundbreaking applications developed by the authors. The Future of MMs sets forth an expert view on future challenges and prospects. This engineering approach to metamaterials paves the way for a new generation of microwave and photonic devices and structures. It is recommended for electrical engineers, as well as physicists and optical engineers, with an interest in practical negative refractive index structures and materials.

## **Coal and Biomass Gasification**

This book presents selected peer-reviewed papers from the International Conference on Mechanical and Energy Technologies, which was held on 7–8 November 2019 at Galgotias College of Engineering and Technology, Greater Noida, India. The book reports on the latest developments in the field of mechanical and energy technology in contributions prepared by experts from academia and industry. The broad range of topics covered includes aerodynamics and fluid mechanics, artificial intelligence, nonmaterial and nonmanufacturing technologies, rapid manufacturing technologies and prototyping, remanufacturing, renewable energies technologies, metrology and computer-aided inspection, etc. Accordingly, the book offers a valuable resource for researchers in various fields, especially mechanical and industrial engineering, and energy technologies.

## **Analog Communication Systems**

This book gives the first systematic and complete survey of technology and application of amorphous silicon, a material with a huge potential in electronic applications. The book features contributions by world-wide leading researchers in this field.

## **International Books in Print**

This comprehensive and unique book is intended to cover the vast and fast-growing field of electrical and electronic materials and their engineering in accordance with modern developments. Basic and pre-requisite information has been included for easy transition to more complex topics. Latest developments in various fields of materials and their sciences/engineering, processing and applications have been included. Latest topics like PLZT, vacuum as insulator, fiber-optics, high temperature superconductors, smart materials, ferromagnetic semiconductors etc. are covered. Illustrations and examples encompass different engineering disciplines such as robotics, electrical, mechanical, electronics, instrumentation and control, computer, and their inter-disciplinary branches. A variety of materials ranging from iridium to garnets, microelectronics, micro alloys to memory devices, left-handed materials, advanced and futuristic materials are

described in detail.

## **Electromagnetic Metamaterials**

## **General Pediatrics Board Review**

The book is a collection of high quality peer reviewed research papers presented in Seventh International Conference on Bio-Inspired Computing (BIC-TA 2012) held at ABV-IIITM Gwalior, India. These research papers provide the latest developments in the broad area of "Computational Intelligence". The book discusses wide variety of industrial, engineering and scientific applications of nature/bio-inspired computing and presents invited papers from the inventors/originators of novel computational techniques.

## **Advanced Electrical and Electronics Materials**

## **Proceedings of the Indian Science Congress**

Sustainable Materials for Next Generation Energy Devices: Challenges and Opportunities presents the latest state-of-the-art knowledge and innovation related to environmentally-friendly functional materials that can be developed for, and employed in, producing a feasible next generation of energy storage and conversion devices. The book is broken up into three sections, covering Energy Storage, Energy Conversion and Advanced Concepts. It will be an important reference for researchers, engineers and students who want to gain extensive knowledge in green and/or sustainable functional materials and their applications. Provides a concise resource for readers interested in sustainable and green functional materials for energy conversion and storage devices Emphasizes sustainable and green concepts in the design of energy devices based on renewable functional materials Presents a survey of both the challenges and opportunities available for renewable functional materials in the development of energy devices

## **Advances in Mechanical Engineering**

Reminiscent of R.K. Narayan's Malgudi Days, Tamasha in Bandargaon, with its interlinked stories, its effortless dialogue and wry humour, is at once enriching and entertaining.

## **Antenna and Wave Propagation**

This book comprises select proceedings of the International Conference on Recent Innovations and Developments in Mechanical Engineering (IC-RIDME 2018). The book contains peer reviewed articles covering thematic areas such as fluid mechanics, renewable energy, materials and manufacturing, thermal engineering, vibration and acoustics, experimental aerodynamics, turbo machinery, and robotics and mechatronics. Algorithms and methodologies of real-time problems are described in this book. The contents of this book will be useful for both academics and industry professionals.

## **The Physics of Semiconductor Devices**

Pratiyogita Darpan (monthly magazine) is India's largest read General Knowledge and Current Affairs Magazine. Pratiyogita Darpan (English monthly magazine) is known for quality content on General Knowledge and Current Affairs. Topics ranging from national and international news/ issues, personality development, interviews of examination toppers, articles/ write-up on topics like career, economy, history, public administration, geography, polity, social, environment, scientific, legal etc, solved papers of various examinations, Essay and debate contest, Quiz and knowledge testing features are covered every month in this magazine.

## **Sustainable Materials for Next Generation Energy Devices**

This book presents articles from the International Conference on Modelling, Simulation and Intelligent Computing (MoSiCom 2020), held at Birla Institute of Technology and Science Pilani, Dubai Campus, Dubai, UAE, in January 2020. Modelling and simulation are becoming increasingly important in a wide variety of fields, from Signal, Image and Speech Processing, and Microelectronic Devices and Circuits to Intelligent Techniques, Control and Energy Systems, and Power Electronics. Further, Intelligent Computational techniques are gaining significance in interdisciplinary engineering applications, such as Robotics and Automation, Healthcare Technologies, IoT and its Applications. Featuring the latest advances in the field of engineering applications, this book serves as a definitive reference resource for researchers, professors and practitioners interested in exploring advanced techniques in the field of modelling, simulation and computing.

## **Animal Models of Neurological Disorders**

## **Metamaterials with Negative Parameters**

This book addresses the science and technology of the gasification process and the production of electricity, synthetic fuels and other useful chemicals. Pursuing a holistic approach, it covers the fundamentals of gasification and its various applications. In addition to discussing recent advances and outlining future directions, it covers advanced topics such as underground coal gasification and chemical looping combustion, and describes the state-of-the-art experimental techniques, modeling and numerical simulations, environmentally friendly approaches, and technological challenges involved. Written in an easy-to-understand format with a comprehensive glossary and bibliography, the book offers an ideal reference guide to coal and biomass gasification for beginners, engineers and researchers involved in designing or operating gasification plants.

### **Tamasha in Bandergaon**

This volume covers the recent advances and research on the modeling and simulation of materials. The primary aim is to take the reader through the mathematical analysis to the theories of electricity and magnetism using multiscale modelling, covering a variety of numerical methods such as finite difference time domain (FDTD), finite element method (FEM) and method of moments. The book also introduces the multiscale Green's function (GF) method for static and dynamic modelling and simulation results of modern advanced nanomaterials, particularly the two-dimensional (2D) materials. This book will be of interest to researchers and industry professionals working on advanced materials.

### **Advances in Signal Processing and Communication**

This book comprises select proceedings of the International Conference on Advancement in Energy, Drives, and Control. It covers frontier topics in optimization and control. It covers applications of optimization processes in areas such as computer architecture, communication systems, system optimization, signal processing, fluid dynamics and process control. This book is of use to researchers, professionals, and students from across engineering disciplines.

### **Sensors and Biosensors, MEMS Technologies and its Applications**

### **Fundamentals of Electrical Engineering**

### **Advances in Hard-to-Cut Materials**

This book introduces undergraduate, postgraduate and research students and scientists to animal models of neurological disorders, along with their working principle and brief procedures. Addressing all the disorders related to the central nervous system (CNS) in a single platform, on the basis of various literature surveys it describes different procedures to induce a single disease with the help of toxins/chemicals. It also includes numerous protocols for inducing single neurological diseases, thus fulfilling an urgent need for a book that makes specific procedures for neurological disorders available, so that specific disease can be induced in laboratories according to the availability of resources. Further, it acquaints readers with the pathological changes that occur in a particular neurological disorder, which reflect specific signs and symptoms of any particular disease, and examines how they affect everyday life. It is a valuable resource for researchers aiming to eradicate or improve neurological disorders by testing the benefits of different drugs.

## **Modelling, Simulation and Intelligent Computing**

Advanced Automotive Electricity and Electronics, published as part of the CDX Master Automotive Technician Series, gives students with a basic understanding of automotive electrical the additional knowledge and experience they need to diagnose and fix complex electrical systems and circuits. Focused on a “strategy-based diagnostics” approach, this book helps students master technical trouble-shooting in order to address the problem correctly on the first attempt.

## **Advanced Automotive Electricity and Electronics**

The rapid growth of modern industry has resulted in a growing demand for construction materials with excellent operational properties. However, the improved features of these materials can significantly hinder their manufacture and, therefore, they can be defined as hard-to-cut. The main difficulties during the manufacturing/processing of hard-to-cut materials are attributed especially to their high hardness and abrasion resistance, high strength at room or elevated temperatures, increased thermal conductivity, as well as resistance to oxidation and corrosion. Nowadays, the group of hard-to-cut materials is extensive and still expanding, which is attributed to the development of a novel manufacturing techniques (e.g., additive technologies). Currently, the group of hard-to-cut materials mainly includes hardened and stainless steels, titanium, cobalt and nickel alloys, composites, ceramics, as well as the hard clads fabricated by additive techniques. This Special Issue, “Advances in Hard-to-Cut Materials: Manufacturing, Properties, Process Mechanics and Evaluation of Surface Integrity”, provides the collection of research papers regarding the various problems correlated with hard-to-cut materials. The analysis of these studies reveals the primary directions regarding the developments in manufacturing methods, characterization, and optimization of hard-to-cut materials.

## **Materials Forming, Machining and Post Processing**

## **Recent Trends in Materials and Devices**

Indian social media is awash with right-wing trolls who incite online communal tension and abuse anyone who questions them. But who are they? How are they organized? In this explosive investigation, conducted over two years, Swati Chaturvedi finally lifts the veil over this murky subject

## **Textbook of Neurology**

A work by health and development experts and professionals, this well-researched compilation traces the evolving and highly dynamic nature of HIV/AIDS and its unprecedented health and development threat in Asia. Three decades of HIV/AIDS in Asia studies how the region has responded to this epidemic in the last three decades. It contains country-specific chapters on the HIV/AIDS problem—low-prevalence countries such as Bangladesh and Sri Lanka as well as countries with advanced epidemics such as Cambodia, China, India, Pakistan, Thailand and Vietnam—and the evolving response to it. There is recognition of the fact that Asia remains the hardest hit after Africa. The lesson learnt from the Asian countries show that HIV can be prevented and clinically managed with sustained political commitment, adequate human and financial resources, and inter-sectoral action. With the modus operandi of real-life stories and case studies, this work is highly relevant in assessing the ground reality and the measures required for effective prevention, treatment, and care across the continuum.

## **Handbook of Neurological Examination**

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.

## **Proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing**

## **Advances in System Optimization and Control**

## **Electronic Switching**

A directory to the universities of the Commonwealth and the handbook of their association.

## **Commonwealth Universities Yearbook**

This book provides a detailed understanding of various forming, machining, and post processing techniques. Working principle, process mechanism, salient features and latest developments are primarily focused. It presents some basic and specialized processes to produce quality engineered parts. This book also incorporates some investigations on modelling, simulation and optimization of the aforementioned processes to improve quality and performance, productivity, and sustainability.

## **Advances in Interdisciplinary Engineering**

This book presents select proceedings of the International Conference on Future Learning Aspects of Mechanical Engineering (FLAME 2018). The book discusses interdisciplinary areas such as automobile engineering, mechatronics, applied and structural mechanics, bio-mechanics, biomedical instrumentation, ergonomics, biodynamic modeling, nuclear engineering, agriculture engineering, and farm machineries. The contents of the book will benefit both researchers and professionals.

## **Multiscale Modelling of Advanced Materials**

This book is a thorough study of electronic switching and concentrates on switching aspects and its problems. It spans the century from the very beginning of the telephone service to the present day. It deals with switching, signaling and traffic in the context of telecommunication networks. Some basic theory is presented in both qualitative and quantitative terms. However the main purpose is to introduce concepts, terminology and influence of application on implementations.

## **Algorithms**

## **Technology and Applications of Amorphous Silicon**

## **Three Decades of HIV/AIDS in Asia**

This book is a collection of selected peer-reviewed papers presented at the International Conference on Signal Processing and Communication (ICSC 2018). It covers current research and developments in the fields of communications, signal processing, VLSI circuits and systems, and embedded systems. The book offers in-depth discussions and analyses of latest problems across different sub-fields of signal processing and communications. The contents of this book will prove to be useful for students, researchers, and professionals working in electronics and electrical engineering, as well as other allied fields.

## **Proceedings of International Conference in Mechanical and Energy Technology**

General Pediatrics Board Review is a comprehensive guide for recent residency graduates and re-certifiers preparing for the American Board of Pediatrics (ABP) board exam. The text consists of over 1000 multiple-choice questions, organized into 25 chapters covering pediatrics topics such as fetal and neonatal care, adolescent and young adult medicine, genetics, child maltreatment, pediatric infectious diseases, gastrointestinal disorders, and more. Chapters include questions, answers with detailed explanations and references to primary or landmark articles to help better navigate a standardized exam. Questions are written in a case-based format that emulates the ABP board exam, and are supplemented by figures, tables, and boxes. A Quick Facts section rounds out the text for ease of reference.

## **Engineering Physics (Annual Pattern)**

The first general textbook to offer a complete overview of metamaterial theory and its microwave applications. *Metamaterials with Negative Parameters* represents the only unified treatment of metamaterials available in one convenient book. Devoted mainly to metamaterials that can be characterized by a negative effective permittivity and/or permeability, the book includes a wide overview of the most important topics, scientific fundamentals, and technical applications of metamaterials. Chapter coverage includes: the electrodynamics of left-handed media, synthesis of bulk metamaterials, synthesis of metamaterials in planar technology, microwave applications of metamaterial concepts, and advanced and related topics, including SRR- and CSRR-based admittance surfaces, magneto- and electro-inductive waves, and sub-diffraction imaging devices. A list of problems and references is included at the end of each chapter, and a bibliography offers a complete, up-to-date representation of the current state of the art in metamaterials. Geared toward students and professionals alike, *Metamaterials with Negative Parameters* is an ideal textbook for postgraduate courses and also serves as a valuable introductory reference for scientists and RF/microwave engineers.

## **I Am a Troll**

This book presents the proceedings of the International Conference on Recent Trends in Materials and Devices, which was conceived as a major contribution to large-scale efforts to foster Indian research and development in the field in close collaboration with the community of non-resident Indian researchers from all over the world. The research articles collected in this volume - selected from among the submissions for their intrinsic quality and originality, as well as for their potential value for further collaborations - document and report on a wide range of recent and significant results for various applications and scientific developments in the areas of Materials and Devices. The technical sessions covered include photovoltaics and energy storage, semiconductor materials and devices, sensors, smart and polymeric materials, optoelectronics, nanotechnology and nanomaterials, MEMS and NEMS, as well as emerging technologies.

## **Advanced level physics**

This volume comprises the proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing. It brings together content from academicians, researchers, and industry experts in areas of Wireless Communication and Image Processing. The volume provides a snapshot of current progress in computational creativity and a glimpse of future possibilities. The proceedings include two kinds of paper submissions: (i) regular papers addressing foundation issues, describing original research on creative systems development and modeling; and (ii) position papers describing work-in-progress or research directions for computational creativity. This work will be useful to professionals and researchers working in the core areas of wireless communications and image processing.

## **Pratiyogita Darpan**

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.

## **Engineering Materials**

Divided into four parts: circuits, electronics, digital systems, and electromagnetics, this text provides an understanding of the fundamental principles on which modern electrical engineering is based. It is suitable for a variety of electrical engineering courses, and can also be used as a text for an introduction to electrical engineering.

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