Electronics And Telecommunication Engineering University Question Papers

The increasing demand in home and industry for electronic devices has encouraged designers and researchers to investigate new devices and circuits using new materials that can perform several tasks efficiently with low IC (integrated circuit) area and low power consumption. Furthermore, the increasing demand for portable devices intensifies the search to design sensor elements, an efficient storage cell, and large-capacity memory elements. Electrical and Electronic Devices, Circuits and Materials: Design and Applications will assist the development of basic concepts and fundamentals behind devices, circuits, materials, and systems. This book will allow its readers to develop their understanding of new materials to improve device performance with even smaller dimensions and lower costs. Additionally, this book covers major challenges in MEMS (micro-electromechanical system)-based device and thin-film fabrication and characterization, including their applications in different fields such as sensors, actuators, and biomedical engineering. Key Features: Assists researchers working on devices and circuits to correlate their work with other requirements of advanced electronic systems. Offers guidance for application-oriented electrical and electronic device and circuit design for future energy-efficient systems. Encourages awareness of the international standards for electrical and electronic device and circuit design. Organized into 23 chapters, Electrical and Electronic Devices, Circuits and Materials: Design and Applications will create a foundation to generate new electrical and electronic devices and their applications. It will be of vital significance for students and researchers seeking to establish the key parameters for future work.

This book deals with the advancements made in the verticals of design approach using emerging technologies in artificial intelligence. It intends to deal with incorporating use cases, industry studies and research papers related to application of computer technique in the both the industry verticals.

This book comprises select proceedings of the International Conference on VLSI, Communication and Signal processing (VCAS 2018). It looks at latest research findings in VLSI design and applications. The book covers a wide range of topics in electronics and communication engineering, especially in the area of microelectronics and VLSI design, communication systems and networks, and image and signal processing. The contents of this book will be useful to researchers and professionals alike.

The course, titled COMPUTER GRAPHICS is one of the most fundamental subjects. This subject is being taught to B. Tech students of Computer Science and Engineering, Information Technology in all engineering colleges affiliated to JNTU, Kakinada and various other universities in India. This book is written, keeping in mind the syllabus of various universities. It is also in accordance with the latest (R16) syllabus of JNTU, Kakinada. The main objective of this book is to provide comprehensive coverage in the fields of computer graphics. It is suitable both as a textbook for students and a manual for professionals. The book contains exercises throughout the textbook with solutions.

Robot Cognition and Navigation

Intelligent Communication, Control and Devices

Proceedings of the 9th ICIECE 2021

Proceedings of International Conference on Communication and Artificial Intelligence

COMPUTER GRAPHICS

Proceedings of I3CS2021

This book is a collection of best selected research papers presented at the International Conference on Communication and Artificial Intelligence (ICCAI 2020), held in the Department of Electronics & Communication Engineering, GLA University, Mathura, India, during 17–18 September 2020. The primary focus of the book is on the research information related to artificial intelligence, networks, and smart systems applied in the areas of industries, government sectors, and educational institutions worldwide. Diverse themes with a central idea of sustainable networking solutions are discussed in the book. The book presents innovative work by leading academics, researchers, and experts from industry.

OPTICAL SWITCHING Comprehensive coverage of optical switching technologies and their applications in optical networks Optical Switching: Device Technology and Applications in Networks delivers an accessible exploration of the evolution of optical networks with clear explanations of the current state-of-the-art in the field and modern challenges in the development of Internet-of-Things devices. A variety of optical switches—including MEMS-based, magneto, photonic, and SOA-based—are discussed, as is the application of optical switches in networks. The book is written in a tutorial style, easily understood by both undergraduate and graduate students. It describes the fundamentals and recent developments in optical switch networks and examines the architectural and design challenges faced by those who design and construct emerging optical switch networks, as well as how to overcome those challenges. The book offers ways to assess and analyze systems and applications, comparing a variety of approaches available to the reader. It also provides: A thorough introduction to switch characterization, including optical, electro optical, thermo optical, magneto optical, and acoustic-optic switches Comprehensive explorations of MEMS-based, SOA-based, liquid crystal, photonic crystal, and optical electrical optical (OEO) switches Practical discussions of quantum optical switches, as well as nonlinear optical switches In-depth examinations of the application of optical switches in networks, including switch fabric control and optical switching for high-performance computing Perfect for researchers and professionals in the fields of telecommunications, Internet of Things, and optoelectronics, Optical Switching: Device Technology and Applications in Networks will also earn a place in the libraries of advanced undergraduate and graduate students studying optical networks, optical communications, and sensor applications.

The book is a collection of best selected research papers presented at 6th International Conference on Innovations in Electronics and Communication Engineering at Guru Nanak Institutions Hyderabad, India. The book presents works from researchers, technocrats and experts about latest technologies in electronic and communication engineering. The book covers various streams of communication engineering like signal processing, VLSI design, embedded systems, wireless communications, and electronics and communications in general. The authors have discussed the latest cutting edge technology and the volume will serve as a reference for young researchers.

This book gathers a collection of high-quality peer-reviewed research papers presented at the 2nd International Conference on Data and Information Sciences (ICDIS 2019), held at Raja Balwant Singh Engineering Technical Campus, Agra, India, on March 29-30, 2019. In chapters written by leading researchers, developers, and practitioner from academia and industry, it covers virtually all aspects of computational sciences and information security, including central topics like artificial intelligence, cloud computing, and big data. Highlighting the latest developments and technical solutions, it will show readers from the computer industry how to capitalize on key advances in next-generation computer and communication technology.

Innovations in Electronics and Communication Engineering

Journal of the Institution of Engineers (India).

Select Proceedings of VCAS 2018

Device Technology and Applications in Networks

Cognitive Radio, Mobile Communications and Wireless Networks

A Handbook of Electronics & Telecommunications Engineering

The inadequate use of wireless spectrum resources has recently motivated researchers and practitioners to look for new ways to improve resource efficiency. As a result, new cognitive radio technologies have been proposed as an effective solution. The Handbook of Research on Software-Defined and Cognitive Radio Technologies for Dynamic Spectrum Management examines the emerging technologies being used to overcome radio spectrum scarcity. Providing timely and comprehensive coverage on topics pertaining to channel estimation, spectrum sensing, communication security, frequency hopping, and smart antennas, this research work is essential for use by educators, industrialists, and graduate students, as well as academicians researching in the field.

This book gathers selected papers presented at the Inventive Communication and Computational Technologies conference (ICICCT 2019), held on 29-30 April 2019 at Gnanamani College of Technology, Tamil Nadu, India. The respective contributions highlight recent research efforts and advances in a new paradigm called ISMAC (IoT in Social, Mobile, Analytics and Cloud contexts). Topics covered include the Internet of Things, Social Networks, Mobile Communications, Big Data Analytics, Bio-inspired Computing and Cloud Computing. The book is chiefly intended for academics and practitioners working to resolve practical issues in this area.

This book is a collection of best selected research papers presented at the 6th International Conference on Opto-Electronics and Applied Optics (OPTRONIX 2020) organized by the University of Engineering & Management, Kolkata, India, in June 2020. The primary focus is to address issues and developments in optoelectronics with particular emphasis on communication technology, IoT and intelligent systems, information processing and its different kinds. The theme of the book is in alignment with the theme of the conference "Advances in Smart Communication Technology and Information Processing." The purpose of this book is to inform the scientists and researchers of this field in India and abroad about the latest developments in the relevant field and to raise awareness among the academic fraternity to get them involved in different activities in the years ahead – an effort to realize knowledge-based society.

The book focuses on the integration of intelligent communication systems, control systems, and devices related to all aspects of engineering and sciences. It includes high-quality research papers from the 3rd international conference, ICICCD 2018, organized by the Department of Electronics, Instrumentation and Control Engineering at the University of Petroleum and Energy Studies, Dehradun on 21-22 December 2018. Covering a range of recent advances in intelligent communication, intelligent control and intelligent devices., the book presents original research and findings as well as researchers' and industrial practitioners' practical development experiences of.

Proceedings of the Third International Conference, OPTRONIX 2016

Advances in Data Computing, Communication and Security

Intelligent Sustainable Systems

Power Electronics for Photovoltaic Power Systems

Cryptographic Security Solutions for the Internet of Things

Handbook of Computational Intelligence in Biomedical Engineering and Healthcare

This book discusses data communication and computer networking, communication technologies and the applications of IoT (Internet of Things), big data, cloud computing and healthcare informatics. It explores, examines and critiques intelligent data communications and presents inventive methodologies in communication technologies and IoT. Aimed at researchers importance of data communication and advanced technologies in IoT, it offers different perspectives to help readers increase their knowledge and motivates them to conduct research in the area, highlighting various innovative ideas for future research.

This is an age of Electronics. At the dawn of the new millenium, it is no denying the fact that electronics has influenced the lifestyles of mankind in a manner never seen before. In order to understand the fundamentals of electronics, basic electronics is now taught as a compulsory subject for students of all branches of engineering. This book is planned to meet the electronics. The book discusses in a clear and concise way the fundamental principles and applications of basic electronics. The readers should find the book interesting particularly with large number of objective questions, solved problems and exercise problems.

This book presents the fundamental concepts, recent advancements, and opportunities for future research in various key enabling technologies in next-generation wireless communications. The book serves as a comprehensive source of information in all areas of wireless communications with a particular emphasis on physical (PHY) layer techniques related to 5G w on different emerging techniques that can be adopted in 5G wireless networks. Some of those techniques include massive-MIMO, mm-Wave communications, spectrum sharing, device-to-device (D2D) and vehicular to anything (V2X) communications, radio-frequency (RF) based energy harvesting, and NOMA. Subsequent chapters cover the fundamentals and PHY laye useful for the readers to get familiar with the emerging technologies and their applications.

The world energy demand has been increasing in a rapid manner with the increase of population and rising standard of living. The world population has nearly doubled in the last 40 years from 3.7 billion people to the present 7 billion people. It is anticipated that world population will grow towards 8 billion around 2030. Furthermore, the conventional fossil fuel sup emerging big economies such as China and India would rise tremendously where the China will increase its energy demand by 75% and India by 100% in the next 25 years. With dwindling natural resources, many countries throughout the world have increasingly invested in renewable resources such as photovoltaics (PV) and wind. The world has seen immense grow decades. For example, in Australia, renewable resources represented nearly 15% of total power generation in 2013. Among renewable resources, solar and wind account for 38% of generation. In near future, energy in the domestic and industrial sector will become ""ubiquitous"" where consumers would have multiple sources to get their energy. Another such predic see a rapid growth in global domestic and industrial sectors; conventional power companies, which dominate the electricity market, will face increasing challenges in maintaining their incumbent business models. The efficiency, reliability and cost-effectiveness of the power converters used to interface PV panels to the mains grid and other types of off-grid loads ar describes state-of-the-art power electronic converter topologies used in various PV power conversion schemes. This book aims to provide a reader with a wide variety of topologies applied in different circumstances so that the reader would be able to make an educated choice for a given application.

Power Electronics

Proceedings of 4th ICMETE 2020

Contemporary Developments in High-Frequency Photonic Devices

Artificial Intelligence

Electrical and Electronic Devices, Circuits and Materials

Applications and Innovations

This book presents the concept of cognition in a clear, lucid and highly comprehensive style. It provides an in-depth analysis of mathematical models and algorithms, and demonstrates their application with real life experiments.

The book presents high-quality papers from the Fourth International Conference on Microelectronics and Telecommunication Engineering (ICMTE 2021). It discusses the latest technological trends and advances in major research areas such as microelectronics, wireless communications, optical communication, signal processing, image processing, big data, cloud computing, artificial intelligence and sensor network applications. This book includes the contributions of national and international scientists, researchers, and engineers from both academia and the industry. The contents of this volume will be useful to researchers, professionals, and students alike.

The book discusses the recent research trends in various sub-domains of computing, communication and control. It includes research papers presented at the First International Conference on Emerging Trends in Engineering and Science. Focusing on areas such as optimization techniques, game theory, supply chain, green computing, 5g networks, Internet of Things, social networks, power electronics and robotics, it is a useful resource for academics and researchers alike.

Handbook of Computational Intelligence in Biomedical Engineering and Healthcare helps readers analyze and conduct advanced research in specialty healthcare applications surrounding oncology, genomics and genetic data, ontologies construction, bio-memetic systems, biomedical electronics, protein structure prediction, and biomedical data analysis. The book provides the reader with a comprehensive guide to advanced computational intelligence, spanning deep learning, fuzzy logic, connectionist systems, evolutionary computation, cellular automata, self-organizing systems, soft computing, and hybrid intelligent systems in biomedical and healthcare applications. Sections focus on important biomedical engineering applications, including biosensors, enzyme immobilization techniques, immuno-assays, and nanomaterials for biosensors and other biomedical techniques. Other sections cover gene-based solutions and applications through computational intelligence techniques and the impact of nonlinear/unstructured data on experimental analysis. Presents a comprehensive handbook that covers an Introduction to Computational Intelligence in Biomedical Engineering and Healthcare, Computational Intelligence Techniques, and Advanced and Emerging Techniques in Computational Intelligence Helps readers analyze and do advanced research in specialty healthcare applications Includes links to websites, videos, articles and other online content to expand and support primary learning objectives

OPTRONIX 2020

Optical Switching

An Experiment with Mobile Robots

Circuits, Systems and Signal Processing

Proceedings of ICISS 2021

Advances in VLSI, Communication, and Signal Processing

This book includes my lecture notes for power electronics course course. The characteristics and operation of electronic power devices, firing circuits, and driving circuits for power converters are described and implemented practically in the laboratory. Uncontrolled and controlled, single phase rectifiers are used in various electrical power applications. DC to DC power conversion circuits are investigated. Circuit simulation and practical laboratories are utilized to reinforce concepts. The book is divided to different learning parts · Part1- Describe the characteristics and operation of electronic power devices. · Part2- Describe firing and driving circuits for power electronic converters. · Part3- Analyse the use of uncontrolled and controlled single-phase rectifiers in various electrical power applications. · Part4- Investigate the DC-to-DC power conversion circuits used in power applications. Part1: Describe the characteristics and operation of electronic power devices. 1. Describe diode characteristics, types (power diode, general-purpose, and fast recovery), and connections (series, parallel and freewheeling). 2. Describe thyristor characteristics, two-transistor model, and purpose of di/dt and dv/dt protection. 3. Describe the power MOSFET and IGBT characteristics. 4. Compare electronic power devices in terms of various power converter applications, frequency of operation (switching speed), rating, and switching power losses. Part 2: Describe firing and driving circuits for power electronic converters. 1. Describe ideal and non-ideal properties of operational amplifiers. Determine the operation of various related circuits (inverting and non-inverting amplifiers, buffer amplifier, summing amplifier) 2. Describe the use of an operational amplifier for PWM generation, for triangular and sine wave generation, as a comparator, and its integration into a 555 timer. 3. Explore other basic firing and driving circuits by focusing on requirements and control features such as based on specific power devices and operational amplifier. Part 3: Analyse the use of uncontrolled and controlled single-phase rectifiers in various electrical power applications. 1. Determine the performance characteristics of uncontrolled single-phase, half-wave and full-wave rectifiers, with resistive and inductive loads. 2. Determine the performance characteristics of controlled single-phase, half-wave and full-wave rectifiers with resistive and inductive loads. 3. Determine the change in power factor when using uncontrolled and controlled rectifiers. Define input distortion and displacement factor. 4. Describe how power inversion may be achieved by varying the firing angle in controlled rectifiers. Part 4: Investigate the DC-to-DC power conversion circuits used in power applications. 1. State the principle of step-down and step-up operations. 2. Explain the DC chopper classification and describe switch-mode regulators 3. Explain the operation of buck, boost 4. Explain the operation buck-boost regulators.

This book features research papers presented at the 4th International Conference on Intelligent Sustainable Systems (ICISS 2021), held at SCAD College of Engineering and Technology, Tirunelveli, Tamil Nadu, India, during February 26–27, 2021. The book discusses the latest research works that discuss the tools, methodologies, practices, and applications of sustainable systems and computational intelligence methodologies. The book is beneficial for readers from both academia and industry.

This Handbook is prepared after extensive simulations of circuits with some electronic and engineering software such as Multisim, Pspice, Proteus, MATLAB and Circuit Logic. The Handbook is designed basically to assist both tutors and students in the conduction of laboratory experiments. It has been proven over time that students tend to remember the experiments that they had conducted much better than the lectures that they received. The Handbook has been written in a simple technical language and the mathematics behind the experiments have been clearly derived and explained. The book is intended to add wealth of knowledge, especially in physics, electrical and electronic and communications engineering programmes for students in tertiary institutions such as Polytechnics, Monotechnics and Universities. This Handbook contains five sections and a total of thirty-three experiments which can be categorized into Basic Electronics Software, Communication System Engineering experiments and Optical Communication experiments. Each experiment contains objectives, materials, theoretical background and procedures. The procedure involves steps and

questions for understanding the experiments being conducted.

This book provides an overview of the latest research and development of new technologies for cognitive radio, mobile communications, and wireless networks. The contributors discuss the research and requirement analysis and initial standardization work towards 5G cellular systems and the capacity problems it presents. They show how cognitive radio, with the capability to flexibly adapt its parameters, has been proposed as the enabling technology for unlicensed secondary users to dynamically access the licensed spectrum owned by legacy primary users on a negotiated or an opportunistic basis. They go on to show how cognitive radio is now perceived in a much broader paradigm that will contribute to solve the resource allocation problem that 5G requirements raise. The chapters represent hand-selected expanded papers from EAI sponsored and hosted conferences such as the 12th EAI International Conference on Mobile and Ubiquitous Systems, the 11th EAI International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, the 10th International Conference on Mobile Multimedia Communications, and the EAI International Conference on Software Defined Wireless Networks and Cognitive Technologies for IoT.

5G and Beyond Wireless Systems

Micro-Electronics and Telecommunication Engineering

Proceedings of OWT 2017

Handbook of Research on Software-Defined and Cognitive Radio Technologies for Dynamic Spectrum Management

Basic Electronics

Introduction to Control Engineering Modeling, Analysis and Design

This book is a collection of tutorial-like chapters on all core topics of signals and systems and the electronic circuits. All the topics dealt with in the book are parts of the core syllabi of standard programs in Electrical Engineering, Electrical and Computer Engineering, and Electronics and Telecommunication Engineering domains. This book is intended to serve as a secondary reader or supplementary text for core courses in the area of signals and systems, electronic circuits, and analog and digital signal processing. When studying or teaching a particular topic, the students and instructors of such courses would find it interesting and worthwhile to study the related tutorial chapter in this book in order to enhance their understanding of the fundamentals, simplification of procedures, alternative approaches and relation to other associated topics. In addition, the book can also be used as a primary or secondary text in short-term or refresher courses, and as a self-study guide for professionals wishing to gain a comprehensive review of the signals and systems domain.

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.

This book is a collection of high-quality peer reviewed contributions from the academicians, researchers, practitioners, and industry professionals, accepted in the International Conference on Advances in Data Computing, Communication and Security (I3CS2021) organized by the Department of Electronics and Communication Engineering in collaboration with the Department of Computer Engineering, National Institute of Technology, Kurukshetra, India during 8-10 Sep 2021. The fast pace of advancing technologies and growing expectations of the next-generation requires that the researchers must continuously reinvent themselves through new investigations and development of the new products. The theme of this conference is devised as "Embracing Innovations" for the next-generation data computing and secure communication system.

The Internet of Things is a technological revolution that represents the future of computing and communications. Even though efforts have been made to standardize Internet of Things devices and how they communicate with the web, a uniform architecture is not followed. This inconsistency directly impacts and limits security standards that need to be put in place to secure the data being exchanged across networks. Cryptographic Security Solutions for the Internet of Things is an essential reference source that discusses novel designs and recent developments in cryptographic security control procedures to improve the efficiency of existing security mechanisms that can help in securing sensors, devices, networks, communication, and data in the Internet of Things. With discussions on cryptographic algorithms, encryption techniques, and authentication procedures, this book is ideally designed for managers, IT consultants, startup companies, ICT procurement managers, systems and network integrators, infrastructure service providers, students, researchers, and academic professionals.

Electronics & Telecommunication Engineering Division

Proceedings of ICICCT 2019

Advances in Smart Communication Technology and Information Processing

Design and Applications

Proceedings of the 6th ICIECE 2017

International Conference on Intelligent Data Communication Technologies and Internet of Things (ICICI) 2018

Electronics and Telecommunication Engineering is a field that involves complex electronic apparatus, circuits and equipments that help in executing speedy and efficient telecommunication systems. These engineers design, fabricate, maintain, supervise and manufacture electronic equipments used in entertainment industry, computer industry, communication and defence. Ever increasing pace of development in electronics, audio and video communications systems and the automation in industry have made an electronic engineer a catalyst for the change of the modern society. A Handbook of Electronics and Communication Engineering covers the engineering syllabus of several examinations. The electronics Engineering section gives details on non-linear and active electrical components which are used to design circuits, chips and devices. It also focuses on implementation of principles, applications and algorithms. Communication Engineering is divided into two parts: Analog and Digital. Handbook of Electronics and Communication Engineering deals on an extensive assortment of topics, including transistors, diodes, microprocessors, signals and systems, network theory and microwave engineering. The book highlights important terms and definitions, along with illustrated formulae to make learning easy, with appropriate diagrams, whenever it is appropriate. An extensive coverage of key points for additional information is also given.

This book presents selected papers from the 4th International Conference on Micro-Electronics and Telecommunication Engineering, held at SRM Institute of Science and Technology, Ghaziabad, India, during 26–27 September 2020. It covers a wide variety of topics in micro-electronics and telecommunication engineering, including micro-electronic engineering, computational remote sensing, computer science and intelligent systems, signal and image processing, and information and communication technology.

This open access proceedings includes original, unpublished, peer-reviewed research papers from the International Conference on Wireless Communications, Networking and Applications (WCNA2021), held in Berlin, Germany on December 17-19th, 2021. The topics covered include but are not limited to wireless communications, networking and applications.The papers showcased here share the latest findings on methodologies, algorithms and applications in communication and network, making the book a valuable asset for professors, researchers, engineers, and university students alike. This is an open access book.

As technology continues to become more sophisticated, mimicking natural processes and phenomena becomes more of a reality. Continued research in the field of natural computing enables an understanding of the world around us, in addition to opportunities for manmade computing to mirror the natural processes and systems that have existed for centuries. Nature-Inspired Algorithms for Big Data Frameworks is a collection of innovative research on the methods and applications of extracting meaningful information from data using algorithms that are capable of handling the constraints of processing time, memory usage, and the dynamic and unstructured nature of data. Highlighting a range of topics including genetic algorithms, data classification, and wireless sensor networks, this book is ideally designed for computer engineers, software developers, IT professionals, academicians, researchers, and upper-level students seeking current research on the application of nature and biologically inspired algorithms for handling challenges posed by big data in diverse environments.

Proceeding of 2021 International Conference on Wireless Communications, Networking and Applications

ICCAI 2020

Proceedings of ICDIS 2019

A Tutorials Approach

Proceedings of 5th ICMETE 2021

Nature-Inspired Algorithms for Big Data Frameworks

* Some elementary knowledge of differential equations, vector-matrix analysis & mechanics is a prerequisite.* Text explains basic concepts involved in feedback control theory from the engineer's point of view.* Problems and examples given are drawn from the disciplines of electrical, electronics, chemical, mechanical andaerospace engineering.* Most of the chapters are self-contained and the text will give the students a broader understanding of controlsystem design and analysis.* MATLAB scripts are provided to facilitate students to use it for calculations and analysis.* Each chapter is followed by review problems to test reader's ability to apply the theory involved.About the Book:The material in the text has been organized for gradual and sequential development of control theory starting with astatement of the task of a control engineer at the very outset. This text presents a comprehensive analysis and design ofcontinuous-time control systems and includes more than introductory material for discrete systems with adequateguidelines to extend the results derived in connection with continuous-time systems. Most of the materials includingsolved and unsolved problems presented in the book have been class-tested in senior undergraduate courses in the fieldof control systems at the Electronics and Telecommunication Engineering Department, Jadavpur University, India.Some representative MATLAB scripts used for solving problems are included at the end of each chapter. The detaileddesign steps of fuzzy logic based controller using SIMULINK and MATLAB has been provided in the book to give thestudent a head start in this emerging discipline. In view of extensive use of MATLAB for rapid verification of controllerdesigns, some notes for using MATLAB script M-files and function M-files are included at the end of the book.A chapter has been included to deal with non-linear components and their analysis using MATLAB and SIMULINKthrough user defined s-functions. Finally, a chapter has been included to deal with the implementation of digitalcontrollers on finite bit computer, to bring out the problems associated with digital controllers.Transfer function and state variable models of typical components and subsystems have been derived in the Appendixat the end of the book.

The Proceedings of 3rd International Conference on Opto-Electronics and Applied Optics, OPTRONIX 2016 is an effort to promote and present the research works by scientists and researchers including students in India and abroad in the area of Green Photonics and other related areas as well as to raise awareness about the recent trends of research and development in the area of the related fields. The book has been organized in such a way that it will be easier for the readers to go through and find out the topic of their interests. The first part includes the Keynote addresses by Rajesh Gupta, Department of Energy Science and Engineering, Indian Institute of Technology, Bombay; P.T. Ajith Kumar, President and Leading Scientist Light Logics Holography and Optics, Crescent Hill, Trivandrum, Kerala; and K.K. Ghosh, Institute of Engineering & Management, Kolkata, India. The second part focuses on the Plenary and Invited Talks given by eminent scientists namely, Vasudevan Lakshminarayanan, University of Waterloo, Canada; Motoharu Fujigaki, University of Fukuii, Japan; Takeo Sasaki, Tokyo University of Science, Japan; Kehar Singh, Former Professor, Indian Institute of Technology, Delhi, India; Rajpal S. Sirohi, Tezpur University, India; Ajoy Kumar Chakraborty, Institute of Engineering & Management, India; Lakshminarayan Hazra, Emeritus Professor, Calcutta University, India; S.K. Bhadra, Emeritus Scientist, Indian Institute of Chemical Biology, India; Partha Roy Chaudhuri, Department of Physics, Indian Institute of Technology, Kharagpur, India; Navin Nishchal, Indian Institute of Technology, Patna, India; Tarun Kumar Gangopadhyay, CSIR-Central Glass and Ceramic Research Institute, India; Samudra Roy, Department of Physics, Indian Institute of Technology, Kharagpur, India; Kamakhya Ghatak, University of Engineering & Management, India. The subsequent parts focus on contributory papers in : Green Photonics; Fibre and Integrated Optics; Lasers, Interferometry; Optical Communication and Networks; Optical and Digital Data and Image Processing; Opto-Electronic Devices, Terahertz Technology; Nano-Photonics, Bio-Photonics, Bio-Medical Optics; Lasers, Quantum Optics and Information Technology; E. M. Radiation Theory and Antenna; Cryptography; Quantum and Non-Linear Optics, Opto-Electronic Devices; Non-Linear Waveguides; Micro-Electronics and VLSI; Interdisciplinary.

This book covers two broad domains: state-of-the-art research in GaN HEMT and Ga2O3 HEMT. Each technology covers materials system, band engineering, modeling and simulations, fabrication techniques, and emerging applications. The book presents basic operation principles of HEMT, types of HEMT structures, and semiconductor device physics to understand the device behavior. The book presents numerical modeling of the device and TCAD simulations for high-frequency and high-power applications. The chapters include device characteristics of HEMT including 2DEG density, Id-Vgs, Id-Vds, transconductance, linearity, and C-V. The book emphasizes the state-of-the-art fabrication techniques of HEMT and circuit design for various applications in low noise amplifier, oscillator, power electronics, and biosensor applications. The book focuses on HEMT applications to meet the ever-increasing demands of the industry, innovation in terms of materials, design, modeling, simulation, processes, and circuits. The book will be primarily helpful to undergraduate/postgraduate, researchers, and practitioners in their research.

Microwave photonics and information optics provide high bandwidth and precision along with ultrafast speed at a low cost. In order to reduce noise at the communication trans-receivers, scattering in the devices needs to be decreased, which can be achieved by replacing optoelectronic devices with photonic devices because in the latter only photons propagate electromagnetic waves. Contemporary Developments in High-Frequency Photonic Devices is a crucial research book that examines high-frequency photonics and their applications in communication engineering. Featuring coverage on a wide range of topics such as metamaterials, optoelectronic devices, and plasmonics, this book is excellent for students, researchers, engineers, and professionals.

Proceedings of ICICCD 2018

Advances in Data and Information Sciences

Advances in Computer, Communication and Control

Handbook of Laboratory Experiments in Electronics and Communication Engineering

Advances in Optical Science and Engineering

PHY Layer Perspective