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Applied Identification, Modelling and Simulation, AIMS '84 - International Association of Science and Technology for Development 1984

Doctoral Symposium on Information and Communication Technologies - Karina Abad 2022-11-28

This book constitutes the refereed proceedings of the Second Doctoral Symposium on Information and Communication Technologies, DSICT 2022, held in Manta, Ecuador, in October 2022. The 15 full papers were thoroughly reviewed and selected from the 72 submissions. The papers present research in areas of intelligent systems, artificial intelligence, ICTs and their applications to the real world.

Comprehensive Semiconductor Science and Technology - 2011-01-28

Semiconductors are at the heart of modern living. Almost everything we do, be it work, travel, communication, or entertainment, all depend on some feature of semiconductor technology. Comprehensive Semiconductor Science and Technology captures the breadth of this important field, and presents it in a single source to the large audience who study, make, and exploit semiconductors. Previous attempts at this achievement have been abbreviated, and have omitted important topics. Written and Edited by a truly international team of experts, this work delivers an objective yet cohesive global review of the semiconductor world. The work is divided into three sections. The first section is concerned with the fundamental physics of semiconductors, showing how the electronic features and the lattice dynamics change drastically when systems vary from bulk to a low-dimensional structure and further to a nanometer size. Throughout this section there is an emphasis on the full understanding of the underlying physics. The second section deals largely with the transformation of the conceptual framework of solid state physics into devices and systems which require the growth of extremely high purity, nearly defect-free bulk and epitaxial materials. The last section is devoted to exploitation of the knowledge described in the previous sections to highlight the spectrum of devices we see all around us. Provides a comprehensive global picture of the semiconductor world Each of the work's three sections presents a complete description of one aspect of the whole Written and Edited by a truly international team of experts

Mobile Communication Networks: 5G and a Vision of 6G - Mladen Božanić 2021-02-15

This book contributes to the body of scholarly knowledge by exploring the main ideas of wireless networks of past, present, and future, trends in the field of networking, the capabilities of 5G and technologies that are potential enablers of 6G, potential 6G applications and requirements, as well as unique challenges and opportunities that 6G research is going to offer over the next decade. It covers research topics such as communication via millimeter-waves, terahertz waves and visible light to enable faster speeds, as well as research into achieving other basic requirements of 6G networks. These include low end-to-end latency, high energy efficiency, coverage that is ubiquitous and

always-on, integration of terrestrial wireless with non-terrestrial networks, network management that is made more effective by connected intelligence with machine learning capabilities, as well as support for the evolution of old service classes and support for new ones.

Engineering Electrodynamics - Janusz Turowski 2017-12-19

Due to a huge concentration of electromagnetic fields and eddy currents, large power equipment and systems are prone to crushing forces, overheating, and overloading. Luckily, power failures due to disturbances like these can be predicted and/or prevented. Based on the success of internationally acclaimed computer programs, such as the authors' own RNM-3D, Engineering Electrodynamics: Electric Machine, Transformer, and Power Equipment Design explains how to implement industry-proven modeling and design techniques to solve complex electromagnetic phenomena. Considering recent progress in magnetic and superconducting materials as well as modern methods of mechatronics and computer science, this theory- and application-driven book: Analyzes materials structure and 3D fields, taking into account magnetic and thermal nonlinearities Supplies necessary physical insight for the creation of electromagnetic and electromechanical high power equipment models Describes parameters for electromagnetic calculation of the structural parts of transformers, electric machines, apparatuses, and other electrical equipment Covers power frequency 50-60 Hz (worldwide and US) equipment applications Includes examples, case studies, and homework problems Engineering Electrodynamics: Electric Machine, Transformer, and Power Equipment Design provides engineers, students, and academia with a thorough understanding of the physics, principles, modeling, and design of contemporary industrial devices.

Silicon Heterostructure Devices - John D. Cressler 2018-10-03

SiGe HBTs are the most mature of the Si heterostructure devices and not surprisingly the most completely researched and discussed in the technical literature. However, new effects and nuances of device operation are uncovered year-after-year as transistor scaling advances and application targets march steadily upward in frequency and sophistication. Providing a comprehensive treatment of SiGe HBTs, Silicon Heterostructure Devices covers an amazingly diverse set of topics, ranging from basic transistor physics to noise, radiation effects, reliability, and TCAD simulation. Drawn from the comprehensive and well-reviewed Silicon Heterostructure Handbook, this text explores SiGe heterojunction bipolar transistors (HBTs), heterostructure FETs, various other heterostructure devices, as well as optoelectronic components. The book provides an overview, characteristics, and derivative applications for each device covered. It discusses device physics, broadband noise, performance limits, reliability, engineered substrates, and self-assembling nanostructures. Coverage of optoelectronic devices includes Si/SiGe LEDs, near-infrared detectors, photonic transistors for integrated optoelectronics, and quantum cascade emitters. In addition to this substantial collection of material, the book concludes with a look at the ultimate limits of SiGe HBTs scaling. It contains easy-to-reference appendices on topics including the properties of silicon and germanium, the generalized Moll-Ross relations, and the integral charge-control model, and sample SiGe HBT compact model parameters.

Applied Bohmian Mechanics - Xavier Oriols Pladevall 2019-05-24

Most textbooks explain quantum mechanics as a story where each step follows naturally from the one preceding it. However, the development of quantum mechanics was exactly the opposite. It was a zigzag route, full of personal disputes where scientists were forced to abandon well-established classical concepts and to explore new and imaginative pathways. Some of the explored routes were successful in providing new mathematical formalisms capable of predicting experiments at the atomic scale. However, even such successful routes were painful enough, so that relevant scientists like Albert Einstein and Erwin Schrödinger decided not to support them. In this book, the authors demonstrate the huge practical utility of another of these routes in explaining quantum phenomena in many different research fields. Bohmian mechanics, the formulation of the

quantum theory pioneered by Louis de Broglie and David Bohm, offers an alternative mathematical formulation of quantum phenomena in terms of quantum trajectories. Novel computational tools to explore physical scenarios that are currently computationally inaccessible, such as many-particle solutions of the Schrödinger equation, can be developed from it.

Publications of the National Institute of Standards and Technology ... Catalog - National Institute of Standards and Technology (U.S.) 1990

CMOS 60-GHz and E-band Power Amplifiers and Transmitters - Dixian Zhao 2015-06-29

This book focuses on the development of design techniques and methodologies for 60-GHz and E-band power amplifiers and transmitters at device, circuit and layout levels. The authors show the recent development of millimeter-wave design techniques, especially of power amplifiers and transmitters, and presents novel design concepts, such as “power transistor layout” and “4-way parallel-series power combiner”, that can enhance the output power and efficiency of power amplifiers in a compact silicon area. Five state-of-the-art 60-GHz and E-band designs with measured results are demonstrated to prove the effectiveness of the design concepts and hands-on methodologies presented. This book serves as a valuable reference for circuit designers to develop millimeter-wave building blocks for future 5G applications.

Planar Spiral Inductors, Planar Antennas and Embedded Planar Transformers - Amal Banerjee

This book presents a novel, automated, accurate and unified scheme to design and determine the performance characteristics of standalone planar, spiral inductors and multiple coupled planar spiral inductors (as in embedded transformers), for RF/microwave MMIC designers. The author demonstrates with a set of analysis/design examples a novel scheme that exploits judiciously the existing transmission theory and concepts, organizing and condensing available, scattered information/knowledge about planar spiral inductor, embedded planar transformer and planar antenna design and performance evaluation, into one coherent and unified electronic circuit model easily used by radio frequency electronic circuit engineers. A dedicated chapter contains an exhaustive (19) set of design examples. Presents a bottom-up scheme, starting with Maxwell's equations of classical electrodynamics and transmission line theory (Telegrapher's equation), specifically microstrips; Demonstrates design of standalone planar, spiral inductors and multiple coupled planar spiral inductors; Includes a set of ready-to-use, C executables (for both Linux and Windows), that accept predefined input parameters for each of the sub-circuits discussed and generate SPICE netlists for the equivalent electrical circuit; Automates execution of multi-step design calculations to guarantee their accuracy and reliability.

RF and mm-Wave Power Generation in Silicon - Hua Wang 2015-12-10

This book presents the challenges and solutions of designing power amplifiers at RF and mm-Wave frequencies in a silicon-based process technology. It covers practical power amplifier design methodologies, energy- and spectrum-efficient power amplifier design examples in the RF frequency for cellular and wireless connectivity applications, and power amplifier and power generation designs for enabling new communication and sensing applications in the mm-Wave and THz frequencies. With this book you will learn: Power amplifier design fundamentals and methodologies Latest advances in silicon-based RF power amplifier architectures and designs and their integration in wireless communication systems State-of-the-art mm-Wave/THz power amplifier and power generation circuits and systems in silicon Extensive coverage from fundamentals to advanced design topics, focusing on various layers of abstraction: from device modeling and circuit design strategy to advanced digital and mixed-signal architectures for highly efficient and linear power amplifiers New architectures for power amplifiers in the cellar and wireless connectivity covering detailed design methodologies and state-of-the-art performances Detailed design techniques, trade-off analysis and design examples for efficiency enhancement at power back-off and linear amplification for spectrally-efficient non-constant envelope modulations Extensive coverage of mm-Wave

power-generation techniques from the early days of the 60 GHz research to current state-of the-art reconfigurable, digital mm-Wave PA architectures Detailed analysis of power generation challenges in the higher mm-Wave and THz frequencies and novel technical solutions for a wide range for potential applications, including ultrafast wireless communication to sensing, imaging and spectroscopy Contributions from the world-class experts from both academia and industry

Nanotechnologie und Nanoprozesse - Wolfgang Fahrner 2011-06-28

Eine kompakt aufbereitete, didaktische Zusammenstellung der Nanotechnologie auf ihrem aktuellen Stand findet der Student oder praktisch tätige Ingenieur im vorliegenden Buch. Nach einem kurzen Abriss über die historische Entwicklung beschreibt das Werk die Verfahren zur Herstellung und Charakterisierung von wenige Nanometer großen Strukturen, leitet über zu deren (elektrischen) Anwendungen und den physikalischen Messmethoden zur Bestimmung der Eigenschaften von Nanodefekten, -schichten und -partikeln und erläutert schließlich alle wichtigen Präparationstechniken, die heute in der Nanotechnologie zur Verfügung stehen. Auf der Grundlage von gesicherten Fakten wird dabei eine Bewertung der Nanotechnologie, eine Abschätzung ihrer weiteren Entwicklung und ein Ausblick auf ihre Zukunftsaussichten gegeben.

Official Gazette of the United States Patent and Trademark Office - 2002

Publisher's Monthly - 1990

Sensors - Bruno Andò 2017-09-07

This book gathers the best papers presented at the Third Italian National Conference on Sensors, held in Rome, Italy, from 23 to 25 February 2016. The book represents an invaluable and up-to-the-minute tool, providing an essential overview of recent findings, strategies and new directions in the area of sensor research. Further, it addresses various aspects based on the development of new chemical, physical or biological sensors, assembling and characterization, signal treatment and data handling. Lastly, the book applies electrochemical, optical and other detection strategies to relevant issues in the food and clinical environmental areas, as well as industry-oriented applications.

Fundamentals of Nanoscaled Field Effect Transistors - Amit Chaudhry 2013-04-23

Fundamentals of Nanoscaled Field Effect Transistors gives comprehensive coverage of the fundamental physical principles and theory behind nanoscale transistors. The specific issues that arise for nanoscale MOSFETs, such as quantum mechanical tunneling and inversion layer quantization, are fully explored. The solutions to these issues, such as high-κ technology, strained-Si technology, alternate devices structures and graphene technology are also given. Some case studies regarding the above issues and solution are also given in the book.

Wireless Mobile Communication and Healthcare - Balwant Godara 2013-04-03

This book constitutes the refereed proceedings of the Third International Conference on Wireless Mobile Communication and Healthcare, MobiHealth 2012, and of the two workshops: Workshop on Advances in Personalized Healthcare Services, Wearable Mobile Monitoring, and Social Media Pervasive Technologies (APHS 2012), and Workshop on Advances in Wireless Physical Layer Communications for Emerging Healthcare Applications (IWAWPLC 2012), all held in Paris, France, in November 2012. The 39 revised full papers presented were carefully reviewed and selected from 66 submissions. The papers are organized in topical sections covering wearable, outdoor and home-based applications; remote diagnosis and patient management; data processing; sensor devices and systems; biomedical monitoring in relation to society and the environment; body area networks; telemedicine systems for disease-specific applications; data collection and management; papers from the invited session "Implants"; papers from the IWAWPLC and APHS workshops.

The RF and Microwave Handbook - 3 Volume Set - Mike Golio 2018-10-08

By 1990 the wireless revolution had begun. In late 2000, Mike Golio gave the world a significant tool to use in this revolution: The RF and Microwave Handbook. Since then, wireless

technology spread across the globe with unprecedented speed, fueled by 3G and 4G mobile technology and the proliferation of wireless LANs. Updated to reflect this tremendous growth, the second edition of this widely embraced, bestselling handbook divides its coverage conveniently into a set of three books, each focused on a particular aspect of the technology. Six new chapters cover WiMAX, broadband cable, bit error ratio (BER) testing, high-power PAs (power amplifiers), heterojunction bipolar transistors (HBTs), as well as an overview of microwave engineering. Over 100 contributors, with diverse backgrounds in academic, industrial, government, manufacturing, design, and research reflect the breadth and depth of the field. This eclectic mix of contributors ensures that the coverage balances fundamental technical issues with the important business and marketing constraints that define commercial RF and microwave engineering. Focused chapters filled with formulas, charts, graphs, diagrams, and tables make the information easy to locate and apply to practical cases. The new format, three tightly focused volumes, provides not only increased information but also ease of use. You can find the information you need quickly, without wading through material you don't immediately need, giving you access to the caliber of data you have come to expect in a much more user-friendly format.

5G and E-Band Communication Circuits in Deep-Scaled CMOS - Marco Vigilante 2018-02-07

This book discusses design techniques, layout details and measurements of several key analog building blocks that currently limit the performance of 5G and E-Band transceivers implemented in deep-scaled CMOS. The authors present recent developments in low-noise quadrature VCOs and tunable inductor-less frequency dividers. Moreover, the design of low-loss broadband transformer-based filters that realize inter-stage matching, power division/combining and impedance transformation is discussed in great detail. The design and measurements of a low-noise amplifier, a downconverter and a highly-linear power amplifier that leverage the proposed techniques are shown. All the prototypes were realized in advanced nanometer scaled CMOS technologies without RF thick to metal option.

Proceedings in Print - 1981

Proceedings - 2000

Index to IEEE Publications - Institute of Electrical and Electronics Engineers 1998

Issues for 1973- cover the entire IEEE technical literature.

Factories of the Future - Tullio Tolio 2019-02-14

This book is open access under a CC BY 4.0 license.This book presents results relevant in the manufacturing research field, that are mainly aimed at closing the gap between the academic investigation and the industrial application, in collaboration with manufacturing companies. Several hardware and software prototypes represent the key outcome of the scientific contributions that can be grouped into five main areas, representing different perspectives of the factory domain:1) Evolutionary and reconfigurable factories to cope with dynamic production contexts characterized by evolving demand and technologies, products and processes.2) Factories for sustainable production, asking for energy efficiency, low environmental impact products and processes, new de-production logics, sustainable logistics.3) Factories for the People who need new kinds of interactions between production processes, machines, and human beings to offer a more comfortable and stimulating working environment.4) Factories for customized products that will be more and more tailored to the final user's needs and sold at cost-effective prices.5) High performance factories to yield the due production while minimizing the inefficiencies caused by failures, management problems, maintenance.This books is primarily targeted to academic researchers and industrial practitioners in the manufacturing domain.

advances in microwaves and lightwaves -

Two-Dimensional Electronics - Prospects and Challenges - Frank Schwierz 2018-09-27

This book is a printed edition of the Special Issue "Two-Dimensional Electronics - Prospects and Challenges" that was published in Electronics

Low-Power Analog Techniques, Sensors for

Mobile Devices, and Energy Efficient Amplifiers - Kofi A. A. Makinwa 2019-01-28
This book is based on the 18 invited tutorials presented during the 27th workshop on Advances in Analog Circuit Design. Expert designers from both industry and academia present readers with information about a variety of topics at the frontiers of analog circuit design, including the design of analog circuits in power-constrained applications, CMOS-compatible sensors for mobile devices and energy-efficient amplifiers and drivers. For anyone involved in the design of analog circuits, this book will serve as a valuable guide to the current state-of-the-art. Provides a state-of-the-art reference in analog circuit design, written by experts from industry and academia; Presents material in a tutorial-based format; Covers the design of analog circuits in power-constrained applications, CMOS-compatible sensors for mobile devices and energy-efficient amplifiers and drivers.
Handbook for III-V High Electron Mobility Transistor Technologies - D. Nirmal 2019-05-14
This book focusses on III-V high electron mobility transistors (HEMTs) including basic physics, material used, fabrications details, modeling, simulation, and other important aspects. It initiates by describing principle of operation, material systems and material technologies followed by description of the structure, I-V characteristics, modeling of DC and RF parameters of AlGaN/GaN HEMTs. The book also provides information about source/drain engineering, gate engineering and channel engineering techniques used to improve the DC-RF and breakdown performance of HEMTs. Finally, the book also highlights the importance of metal oxide semiconductor high electron mobility transistors (MOS-HEMT). Key Features Combines III-As/P/N HEMTs with reliability and current status in single volume Includes AC/DC modelling and (sub)millimeter wave devices with reliability analysis Covers all theoretical and experimental aspects of HEMTs Discusses AlGaN/GaN transistors Presents DC, RF and breakdown characteristics of HEMTs on various material systems using graphs and plots
Reconfigurable Circuits and Technologies for Smart Millimeter-Wave Systems - Philippe Ferrari 2022-05-25
Describes the theory, modeling, and design of tunable mm-wave circuits and systems using CMOS, RF MEMS, and microwave liquid crystals.
Emerging Innovations in Microwave and Antenna Engineering - Zbitou, Jamal 2018-10-12
Continuing advancements in electronics creates the possibility of communicating with more people at greater distances. Such an evolution calls for more efficient techniques and designs in radio communications. Emerging Innovations in Microwave and Antenna Engineering provides innovative insights into theoretical studies on propagation and microwave design of passive and active devices. The content within this publication is separated into three sections: the design of antennas, the design of the antennas for the RFID system, and the design of a new structure of microwave amplifier. Highlighting topics including additive manufacturing technology, design application, and performance characteristics, it is designed for engineers, electricians, researchers, students, and professionals, and covers topics centered on modern antenna and microwave circuits design and theory.
Infrared and Millimeter Waves V13 - Kenneth J. Button 1985-11-28
Infrared and Millimeter Waves, Volume 13: Millimeter Components and Techniques, Part IV compiles the work of several authors while focusing on certain aspects of infrared and millimeter waves, such as sources of radiation, instrumentation, and millimeter systems. This volume covers millimeter components and techniques. This text first covers the use of powerful gyrotrons for thermonuclear research, and then discusses high-power coherent radiation sources. Kinetic theory of harmonic gyrotron oscillator with slotted resonant structure is the focus of Chapter 3, while integrated fin-line components for communication, radar, and radiometer applications is the subject of Chapter 4. The fifth chapter discusses propagation and mode coupling in corrugated and smooth-wall circular waveguides. Chapter 6 discusses far-infrared properties of inhomogeneous materials, and the last chapter covers solid-state spectroscopy with far-infrared continuous-wave lasers. This book will be of great use to researchers or

professionals whose work involves infrared and millimeter waves.
Microwave Journal - 2000

RF and Microwave Transmitter Design - Andrei Grebennikov 2011-07-12
RF and Microwave Transmitter Design is unique in its coverage of both historical transmitter design and cutting edge technologies. This text explores the results of well-known and new theoretical analyses, while informing readers of modern radio transmitters' pracitcal designs and their components. Jam-packed with information, this book broadcasts and streamlines the author's considerable experience in RF and microwave design and development.
Research in Progress - 1987

Scientific and Technical Aerospace Reports - 1995
Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.
Gallium Nitride Electronics - Rüdiger Quay 2008-04-05
This book is based on nearly a decade of materials and electronics research at the leading research institution on the nitride topic in Europe. It is a comprehensive monograph and tutorial that will be of interest to graduate students of electrical engineering, communication engineering, and physics; to materials, device, and circuit engineers in research and industry; to all scientists with a general interest in advanced electronics.
Index to IEEE Periodicals - Institute of Electrical and Electronics Engineers 1972

Microwave Engineering - R.L. Yadava 2018-05-04
The book deals with fundamental concept, theory and designs, as well as applications of microwaves in details. In addition it also describes EMI and EMC, Microwave hazards, and applications of microwaves in medicals. Radars and Radar devices, and MASERS have also been described properly in this book. Microwave antennas have been explained with emphasis on theory of operation and design procedures. The book also focuses on microwave measurements along with necessary requirements and different methods of measurement.
Wireless Power Transfer - Johnson I. Agbinya 2022-09-01
Wireless Power Transfer is the second edition of a well received first book, which published in 2012. It represents the state-of-the-art at the time of writing, and addresses a unique subject of great international interest in terms of research. Most of the chapters are contributed by the main author, though as in the first edition several chapters are contributed by other authors. The authors of the various chapters are experts in their own right on the specific topics within wireless energy transfer. Compared to the first edition, this new edition is more comprehensive in terms of the concepts discussed, and the range of current industrial applications which are presented, such as those of magnetic induction. From the eleven chapters of the first edtion, this second edition has expanded to twenty chapters. More chapters on the theoretical foundations and applications have been included. This new edition also contains chapters which deal with techniques for reducing power losses in wireless power transfer systems. In this regard, specific chapters discuss impedance matching methods, frequency splitting and how to deploy systems based on frequency splitting. A new chapter on multi-dimensional wireless power transfer has also been added. The design of wireless power transfer systems based on bandpass filtering approach has been included, in addition to the two techniques using couple mode theory and electronic circuits.The book has retained chapters on how to increase efficiency of power conversion and induction, and also how to control the power systems. Furthermore, detailed techniques for power relay, including applications, which were also discussed in the first edition, have been updated and kept. The book is written in a progressive manner, with a knowledge of the first chapters making it easier to understand the later chapters. Most of the underlying theories covered in the book are clearly relevant to inductive near field communications, robotic control, robotic propulsion techniques, induction heating and

cooking and a range of mechatronic systems.
Dissertation Abstracts International - 2008

Frontiers In Electronics - Selected Papers From The Workshop On Frontiers In Electronics 2015 (Wofe-15) - Sorin Cristoloveanu 2017-01-13
Rapid pace of electronic technology evolution and current economic climate compel a merger of such technical areas as low-power digital electronics, microwave power circuits, optoelectronics, etc., which collectively have become the foundation of today's electronic technology.This Workshop aims at encouraging active cross-fertilization of the different 'species' in this electronic planet. The WOFE2015 had gather experts from academia, industry, and government agencies to review the recent exciting breakthroughs and their underlying physical mechanisms.This Monographs includes ten invited articles; cover topics ranging from Ultra-thin silicon nanowire solar cells, to hydrogen generation under illumination of GaN-based structures and from ultrafast response of nanoscale device structures to Power device optimization.