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This book constitutes the Proceedings of the conference 'Chemical Structures: The International Language of Chemistry' which was held at Leeuwenhorst Congress Centre, Noordwijkerhout in the Netherlands, between May 31 and June 4, 1987. The conference was jointly sponsored by the Chemical Structure Association, the American Chemical Society Division of Chemical Information, and the Chemical Information Groups of the Royal Society of Chemistry and the German Chemical Society. The purpose of the conference was to

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bring together experts and an international professional audience to discuss and to further basic and applied research and development in the processing, storage, retrieval and use of chemical structures, to focus international attention on the importance of chemical information and the vital research being carried out in chemical information science and to foster co-operation among major chemical information organisations in North America and Europe. Subjects covered included integrated in-house databases, substructure searching methodology, spectral databanks, new technologies (microcomputers, CD-ROM, parallel processing and expert systems) and chemical

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reactions. The keynote address was given by Mike Lynch of the University of Sheffield. In this, the opening chapter of the book, Mike discusses progress made in chemical information science in the last fifteen years and describes his own approach to research. In a plenary session, Myra Williams of Merck, Sharp and Dohme considered future trends from the point of view of the information manager and strategic planner in industry. She emphasises the need for integration, open architecture and a uniform user interface. This unique and comprehensive resource offers you a detailed treatment of the operations principles, key parameters, and

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specific characteristics of active and passive RF, microwave, and millimeter-wave components. The book covers both linear and nonlinear components that are used in a wide range of application areas, from communications and information sciences, to avionics, space, and military engineering. This practical book presents descriptions and clear examples and of the best materials and products used in the field, including laminates, prepregs, substrates; microstrip, coaxial and waveguide transmission lines; fixed and rotating connectors; matching and adjusting elements; frequency filters; phase shifters; and ferrite gates and circulators. Moreover,

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the book offers you in-depth discussions on microwave switches and matrices, including MEMS technology, solid state and vacuum amplifiers, mixers, modulators and demodulators, and oscillation sources. You also find coverage of the stable frequency synthesizer structure and sources of modulated or noisy signals. Greatly adding to the usefulness of this volume is the inclusion of more than 700 Internet addresses of manufacturers from across the globe.

Infrastructure for Homeland Security Environments Wireless Sensor Networks helps readers discover the emerging field of low-cost standards-based sensors that promise a high order of spatial and

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temporal resolution and accuracy in an ever-increasing universe of applications. It shares the latest advances in science and engineering paving the way towards a large plethora of new applications in such areas as infrastructure protection and security, healthcare, energy, food safety, RFID, ZigBee, and processing. Unlike other books on wireless sensor networks that focus on limited topics in the field, this book is a broad introduction that covers all the major technology, standards, and application topics. It contains everything readers need to know to enter this burgeoning field, including current applications and promising research and

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development; communication and networking protocols; middleware architecture for wireless sensor networks; and security and management. The straightforward and engaging writing style of this book makes even complex concepts and processes easy to follow and understand. In addition, it offers several features that help readers grasp the material and then apply their knowledge in designing their own wireless sensor network systems:

- * Examples illustrate how concepts are applied to the development and application of wireless sensor networks
- * Detailed case studies set forth all the steps of design and implementation needed to solve real-world

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problems * Chapter conclusions that serve as an excellent review by stressing the chapter's key concepts * References in each chapter guide readers to in-depth discussions of individual topics This book is ideal for networking designers and engineers who want to fully exploit this new technology and for government employees who are concerned about homeland security. With its examples, it is appropriate for use as a coursebook for upper-level undergraduates and graduate students.

The thesis deals with averaging dynamics in a multiagent networked system, which is a main mechanism for diffusing the

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information over such networks. It arises in a wide range of applications in engineered physical networks (such as mobile communication and sensor networks), as well as social and economic networks. The thesis provides in depth study of stability and other phenomena characterizing the limiting behavior of both deterministic and random averaging dynamics. By developing new concepts, and using the tools from dynamic system theory and non-negative matrix theory, several novel fundamental results are rigorously developed. These contribute significantly to our understanding of averaging dynamics as well as to non-

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negative random matrix theory. The exposition, although highly rigorous and technical, is elegant and insightful, and accompanied with numerous illustrative examples, which makes this thesis work easily accessible to those just entering this field and will also be much appreciated by experts in the field.

How Cloudiness Keeps Changing
Our Life, Economy and Technology
A Vision for the Coming Age of
Prosperity

Silicon Optoelectronic Integrated
Circuits

Product of Random Stochastic
Matrices and Distributed Averaging
Soft Computing: Theories and
Applications

Fiber Optics

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The huge progress which has been achieved in the field is covered here, in the first comprehensive monograph on vertical-cavity surface-emitting lasers (VCSELs) since eight years. Apart from chapters reviewing the research field and the laser fundamentals, there are comprehensive updates on red and blue emitting VCSELs, telecommunication VCSELs, optical transceivers, and parallel-optical links for computer interconnects. Entirely new contributions are made to the fields of vectorial

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three-dimensional optical modeling, single-mode VCSELS, polarization control, polarization dynamics, very-high-speed design, high-power emission, use of high-contrast gratings, GaInNASb long-wavelength VCSELS, optical video links, VCSELS for optical mice and sensing, as well as VCSEL-based laser printing. The book appeals to researchers, optical engineers and graduate students.

Chronicles the startup of RF Micro Devices, a North Carolina microelectronics

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firm that designed the first radio frequency integrated circuits, enabling the cellular phone phenomenon.

Advances in Computing, Communication, Automation and Biomedical Technology aims to bring together leading academic, scientists, researchers, industry representatives, postdoctoral fellows and research scholars around the world to share their knowledge and research expertise, to advances in the areas of Computing, Communication, Electrical, Civil, Mechanical and

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Biomedical Systems as well as to create a prospective collaboration and networking on various areas. It also provides a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and solutions adopted in the fields of innovation.

Ultrananocrystalline Diamond: Synthesis, Properties, and Applications is a unique

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practical reference handbook. Written by the leading experts worldwide it introduces the science of UNCD for both the R&D community and applications developers using UNCD in a diverse range of applications from macro to nanodevices, such as energy-saving ultra-low friction and wear coatings for mechanical pump seals and tools, high-performance MEMS/NEMS-based systems (e.g. in telecommunications), the next generation of high-definition flat panel displays, in-vivo

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biomedical implants, and biosensors. This work brings together the basic science of nanoscale diamond structures, with detailed information on ultra-nanodiamond synthesis, properties, and applications. The book offers discussion on UNCD in its two forms, as a powder and as a chemical vapor deposited film. Also discussed are the superior mechanical, tribological, transport, electrochemical, and electron emission properties of UNCD for a wide range of applications

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including MEMS/ NEMS, surface acoustic wave (SAW) devices, electrochemical sensors, coatings for field emission arrays, photonic and RF switching, biosensors, and neural prostheses, etc.

Ultrananocrystalline Diamond summarises the most recent developments in the nanodiamond field, and presents them in a way that will be useful to the R&D community in both academic and corporate sectors. Coverage of both nanodiamond particles and films make this a valuable

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*resource for both the
nanotechnology community
and the field of thin
films / vacuum deposition.*

*Written by the world's
leading experts in
nanodiamond, this second
edition builds on its
predecessor's reputation
as the most up-to-date
resource in the field.*

*The Creative Ordeal
Building a World-leading
High-tech Company from
Scratch in Tumultuous
Times*

*Practical RF Circuit
Design for Modern Wireless
Systems*

Vacuum Electronics

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Ultrananocrystalline

Diamond

*Electronic Components and
Systems*

The recent shift in focus from defense and government work to commercial wireless efforts has caused the job of the typical microwave engineer to change dramatically. The modern microwave and RF engineer is expected to know customer expectations, market trends, manufacturing technologies, and factory models to a degree that

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**is unprecedented in the
The demand for liquid
crystals with better
display parameters and
lower power consumption
has stimulated much
research into their
properties and
characterization. A large
team of over 50 leading
researchers from the
USA, Europe and Japan
have focused their
expertise to extract and
review data on a wide
range of properties of
nematics, including those
which are essential to the
development of all types**

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of liquid crystal device. Where appropriate these properties are also explained with expert commentary. The book is fully illustrated and structured for reference. A seminal reference to electrically small antennas for today's wireless and Wi-Fi world This book is dedicated to the challenges posed by electrically small antennas and their solutions. Electrically small antennas have characteristics that limit performance: low

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radiation resistance, high reactance, low efficiency, narrow bandwidth, and increased loss in the matching network. Most of these limitations are shared by two other classes of antennas: superdirective and superconducting antennas. All three classes of antennas are thoroughly treated in three interrelated parts: * Part One, Electrically Small Antennas, begins with a discussion of the fundamental limitations of bandwidth and

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matching, then provides detailed design information on loaded whips and dipoles, ferrite loops, patches with unusual substrates, and dielectric resonator antennas. In addition to exploring designs that work, the author sets forth antenna designs that are based on good physics yet are poor performers, as well as designs with both poor underlying physics and poor performance. * Part Two, Superdirective Antennas, sets forth

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basic capabilities and limitations of superdirective antennas, both apertures and arrays, and investigates bandwidth, efficiency, and tolerances. The author explores the magnification of intrinsic matching circuit loss due to a large mismatch and evaluates the recent and promising non-Foster matching circuits. * Part Three, Superconducting Antennas, reviews superconductivity concepts and new principles for dipole,

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loop, and patch antennas. The author concludes with a discussion of superconducting delay lines for wideband phased array steering. Throughout the book, the author provides readers with a historical perspective, setting forth what has been investigated, what works, and what does not. Each part has its own author index and a list of references to help readers continue their explorations of particular topics. With the explosive

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demand for wireless and Wi-Fi, this seminal reference is essential reading for all antenna professionals and is recommended as a graduate-level course book.

Explains the circuit design of silicon optoelectronic integrated circuits (OEICs), which are central to advances in wireless and wired telecommunications. The essential features of optical absorption are summarized, as is the device physics of

photodetectors and their integration in modern bipolar, CMOS, and BiCMOS technologies. This information provides the basis for understanding the underlying mechanisms of the OEICs described in the main part of the book. In order to cover the topic comprehensively, Silicon Optoelectronic Integrated Circuits presents detailed descriptions of many OEICs for a wide variety of applications from various optical sensors,

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**smart sensors, 3D-
cameras, and optical
storage systems (DVD) to
fiber receivers in deep-
sub- μm CMOS. Numerous
detailed illustrations help
to elucidate the material.**

Electronics World

**The Story of Raytheon
Satellite Communications**

Payload and System

Fundamentals,

Technology and

**Applications of Vertical-
Cavity Surface-Emitting**

Lasers

**Spectral Line Shapes in
Astrophysics and Related**

Topics

F & S Index United States Annual

This comprehensive handbook provides readers with a single-source reference to the theoretical fundamentals, physical mechanisms and principles of operation of all known microwave devices and various radars. The author discusses proven methods of computation and design development, process, schematic, schematic-technical and construction peculiarities of each breed of the microwave devices, as well as the most popular and original technical solutions for radars. Coverage also includes the history of creation of the most widely used radars, as well as guidelines for their potential upgrading. Offers readers a

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comprehensive, systematized view of all contemporary knowledge, acquired during the last 20 years, on radars and related disciplines; Provides a single-source reference on the physical mechanisms and principles of operation of the basic components of radio location devices, including theoretical aspects of designing the necessary, high-efficiency electronic devices and systems, as well as key, practical methods of computation and design; Presents complex topics using simple language, minimizing mathematics.

*Advances in Computing,
Communication, Automation and
Biomedical Technology IJAICT India
Publications*

Results of the NATO Advanced

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*Research Workshop on Middle
Infrared Coherent Sources (MICS)
2005, Barcelona, Spain, 6-11
November 2005.*

This book tells you all you want to know about optical fibers: Their structure, their light-guiding mechanism, their material and manufacture, their use. It began with telephone, then came telefax and email. Today we use search engines, music downloads and internet videos, all of which require shuffling of bits and bytes by the zillions. The key to all this is the conduit: the line which is designed to carry massive amounts of data at breakneck speed. In their data carrying capacity optical fiber lines beat all other technologies (copper cable, microwave beacons, satellite

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links) hands down, at least in the long haul; wireless devices rely on fibers, too. Several effects tend to degrade the signal as it travels down the fiber: they are spelled out in detail. Nonlinear processes are given due consideration for a twofold reason: On the one hand they are fundamentally different from the more familiar processes in electrical cable. On the other hand, they form the basis of particularly interesting and innovative applications, provided they are understood well enough. A case in point is the use of so-called solitons, i.e. special pulses of light which have the wonderful property of being able to heal after perturbation. The book will take you from the physical basics of ray and beam optics, explain fiber

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structure and the functions of optical elements, and bring you to the forefront of both applications and research. The state of the art of high speed data transmission is described, and the use of fiber optic sensors in metrology is treated. The book is written in a pedagogical style so that students of both physics and electrical engineering, as well as technicians and engineers involved in optical technologies, will benefit. The new edition is largely updated and has new sections on nonlinear phenomena in fibers as well as on the latest trends in applications.

Handbook of RF, Microwave, and Millimeter-wave Components Technology, Protocols, and Applications

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*Microstrip and Printed Antennas:
Applications-Based Designs
Wireless Sensor Networks
Electrically Small, Superdirective, and
Superconducting Antennas*
Spectral lines, widths, and
shapes are powerful tools for
emitting/absorbing gas
diagnostics in different
astrophysical objects (from the
solar system to the most distant
objects in the
universe—quasars). On the
other hand, experimental and
theoretical investigations of
laboratory plasma have been
applied in spectroscopic
astrophysical research,
especially in research on atomic

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data needed for line shape calculations. Data on spectral lines and their profiles are also important for diagnostics, analysis, and the modelling of fusion plasma, laser-produced plasma, laser design and development, and various plasmas in industry and technology, like light sources based on plasmas or the welding and piercing of metals by laser-produced plasma. The papers from this book can be divided into four groups: 1. stark broadening data for astrophysical and laboratory plasma investigations; 2. applications of spectral lines for

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astrophysical and laboratory plasma research; 3. spectral line phenomena in extragalactic objects, and 4. laboratory astrophysics results for spectra investigation. The reviews and research papers, representing new research on the topics presented in this book, are of interest for specialists and PhD students. We hope that the present book will be useful and interesting for scientists interested in the investigation of spectral line shapes and will contribute to the education of young researchers and PhD students.

This optimistic text examines

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and predicts the 40-year period from 1980-2020 as the key years of a remarkable economic transformation.

This book combines the three dimensions of technology, society and economy to explore the advent of today's cloud ecosystems as successors to older service ecosystems based on networks. Further, it describes the shifting of services to the cloud as a long-term trend that is still progressing rapidly. The book adopts a comprehensive perspective on the key success factors for the technology - compelling business models and

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ecosystems including private, public and national organizations. The authors explore the evolution of service ecosystems, describe the similarities and differences, and analyze the way they have created and changed industries. Lastly, based on the current status of cloud computing and related technologies like virtualization, the internet of things, fog computing, big data and analytics, cognitive computing and blockchain, the authors provide a revealing outlook on the possibilities of future technologies, the future of the internet, and the

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potential impacts on business and society.

Presents reprinted tutorial papers on HEMTs, HBTs and heterojunctions, including papers which report major achievements of the HEMT and HBT technologies in the fields of microwave, millimeter-wave and digital ICs.

Summaries of Technical Reports

Logic Synthesis for Asynchronous Controllers and Interfaces

Fire in the Belly

Proceedings of SoCTA 2018

Nanoparticle Enhanced

Radiation Therapy

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The International Language of Chemistry

Improved targeting of abnormal cells and tissue in the radiotherapy of cancer has been a long-standing goal of researchers. The central purpose of nanoparticle-enhanced radiotherapy (NPRT) is to more precisely control where the radiation dose is delivered, desirably with subcellular precision, provided we can find a method to bring the nanoparticles to target as well as control their concentration and size distribution. The contents within this book will cover the rationale and fundamental principles of NPRT, optimal nanoparticle sizes, concentrations, design and fabrication, effective

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nanoparticle delivery methods, emerging clinical applications of NRT modalities, treatment planning and quality assurance and the potential of NPRT in global health. This volume will serve as a resource for researchers, educators and industry, and as a practical guide or comprehensive reference for students, research trainees and others working in cancer nanomedicine. Key Features Covers the most important advances in nanoparticle-aided radiation therapy over the last few decades Features contributions from leaders in the field Focuses first on the fundamentals of radiosensitization, then it continues with imaging methods and

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concludes with various clinical applications

Fundamentals of III-V

Semiconductor MOSFETs presents the fundamentals and current status of research of compound semiconductor metal-oxide-semiconductor field-effect transistors (MOSFETs) that are envisioned as a future replacement of silicon in digital circuits. The material covered begins with a review of specific properties of III-V semiconductors and available technologies making them attractive to MOSFET technology, such as band-engineered heterostructures, effect of strain, nanoscale control during epitaxial growth. Due to the lack of

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thermodynamically stable native oxides on III-V's (such as SiO_2 on Si), high-k oxides are the natural choice of dielectrics for III-V MOSFETs. The key challenge of the III-V MOSFET technology is a high-quality, thermodynamically stable gate dielectric that passivates the interface states, similar to SiO_2 on Si. Several chapters give a detailed description of materials science and electronic behavior of various dielectrics and related interfaces, as well as physics of fabricated devices and MOSFET fabrication technologies. Topics also include recent progress and understanding of various materials systems; specific issues for electrical measurement of gate

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stacks and FETs with low and wide bandgap channels and high interface trap density; possible paths of integration of different semiconductor materials on Si platform.

How should I prepare for a Digital VLSI Verification Interview? What all topics do I need to know before I turn up for an interview? What all concepts do I need to brush up? What all resources do I have at my disposal for preparation? What does an Interviewer expect in an Interview? These are few questions almost all individuals ponder upon before an interview. If you have these questions in your mind, your search ends here as keeping these questions in their minds, authors

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have written this book that will act as a golden reference for candidates preparing for Digital VLSI Verification Interviews. Aim of this book is to enable the readers practice and grasp important concepts that are applicable to Digital VLSI Verification domain (and Interviews) through Question and Answer approach. To achieve this aim, authors have not restricted themselves just to the answer. While answering the questions in this book, authors have taken utmost care to explain underlying fundamentals and concepts. This book consists of 500+ questions covering wide range of topics that test fundamental concepts through problem statements (a common

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interview practice which the authors have seen over last several years). These questions and problem statements are spread across nine chapters and each chapter consists of questions to help readers brush-up, test, and hone fundamental concepts that form basis of Digital VLSI Verification. The scope of this book however, goes beyond technical concepts. Behavioral skills also form a critical part of working culture of any company. Hence, this book consists of a section that lists down behavioral interview questions as well. Topics covered in this book: 1. Digital Logic Design (Number Systems, Gates, Combinational, Sequential Circuits, State Machines, and other Design

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problems)2. Computer Architecture (Processor Architecture, Caches, Memory Systems)3. Programming (Basics, OOP, UNIX/Linux, C/C++, Perl)4. Hardware Description Languages (Verilog, SystemVerilog)5. Fundamentals of Verification (Verification Basics, Strategies, and Thinking problems)6. Verification Methodologies (UVM, Formal, Power, Clocking, Coverage, Assertions)7. Version Control Systems (CVS, GIT, SVN)8. Logical Reasoning/Puzzles (Related to Digital Logic, General Reasoning, Lateral Thinking)9. Non Technical and Behavioral Questions (Most commonly asked)In addition to technical and

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behavioral part, this book touches upon a typical interview process and gives a glimpse of latest interview trends. It also lists some general tips and Best-Known-Methods to enable the readers follow correct preparation approach from day-1 of their preparations. Knowing what an Interviewer looks for in an interviewee is always an icing on the cake as it helps a person prepare accordingly. Hence, authors of this book spoke to few leaders in the semiconductor industry and asked their personal views on "What do they look for while Interviewing candidates and how do they usually arrive at a decision if a candidate should be hired?". These leaders have been

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working in the industry from many-many years now and they have interviewed lots of candidates over past several years. Hear directly from these leaders as to what they look for in candidates before hiring them. Enjoy reading this book. Authors are open to your feedback. Please do provide your valuable comments, ratings, and reviews. This is the first book primarily about the satellite payload of satellite communications systems. It represents a unique combination of practical systems engineering and communications theory. It tells about the satellites in geostationary and low-earth orbits today, both the so-called bent-pipe payloads and the processing payloads. The on-

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orbit environment, mitigated by the spacecraft bus, is described. The payload units (e.g. antennas and amplifiers), as well as payload-integration elements (e.g. waveguide and switches) are discussed in regard to how they work, what they do to the signal, their technology, environment sensitivity, and specifications. At a higher level are discussions on the payload as an entity: architecture including redundancy; specifications--what they mean, how they relate to unit specifications, and how to verify; and specification-compliance analysis (" budgets ") with uncertainty. Aspects of probability theory handy for calculating and

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using uncertainty and variation are presented. The highest-level discussions, on the end-to-end communications system, start with a practical introduction to physical-layer communications theory. Atmospheric effects and interference on the communications link are described. A chapter gives an example of optimizing a multibeam payload via probabilistic analysis. Finally, practical tips on system simulation and emulation are provided. The carrier frequencies treated are 1 GHz and above. Familiarity with Fourier analysis will enhance understanding of some topics. References are provided throughout the book for readers

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who want to dig deeper. Payload systems engineers, payload proposal writers, satellite-communications systems designers and analysts, and satellite customers will find that the book cuts their learning time. Spacecraft-bus systems engineers, payload unit engineers, and spacecraft operators will gain insight into the overall system. Students in systems engineering, microwave engineering, communications theory, probability theory, and communications simulation and modelling will find examples to supplement theoretical texts. Advances in Computing, Communication, Automation and Biomedical Technology

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Fundamentals of III-V

Semiconductor MOSFETs

Mid-Infrared Coherent Sources and
Applications

Synthesis, Properties and
Applications

The Long Boom

VCSELs

Integrated Silicon Optoelectronics

synthesizes topics from optoelectronics

and microelectronics. The book

concentrates on silicon as the major

base of modern semiconductor devices

and circuits. Starting from the basics of
optical emission and absorption, as well

as from the device physics of

photodetectors, the aspects of the

integration of photodetectors in modern

bipolar, CMOS, and BiCMOS

technologies are discussed. Detailed

descriptions of fabrication technologies

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and applications of optoelectronic integrated circuits are included. The book, furthermore, contains a review of the newest state of research on eagerly anticipated silicon light emitters. In order to cover the topics comprehensively, also included are integrated waveguides, gratings, and optoelectronic power devices. Numerous elaborate illustrations facilitate and enhance comprehension. This extended edition will be of value to engineers, physicists, and scientists in industry and at universities. The book is also recommended to graduate students specializing on microelectronics or optoelectronics.

This comprehensive resource presents antenna fundamentals balanced with the design of printed antennas. Over 70 antenna projects, along with design dimensions, design flows and antenna

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performance results are discussed, including antennas for wireless communication, 5G antennas and beamforming. Examples of smartphone antennas, MIMO antennas, aerospace and satellite remote sensing array antennas, automotive antennas and radar systems and many more printed antennas for various applications are also included. These projects include design dimensions and parameters that incorporate the various techniques used by industries and academia. This book is intended to serve as a practical microstrip and printed antenna design guide to cover various real-world applications. All Antenna projects discussed in this book are designed, analyzed and simulated using full-wave electromagnetic solvers. Based on several years of the author's research in antenna design and development for RF

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and microwave applications, this book offers an in-depth coverage of practical printed antenna design methodology for modern applications.

Nineteen experts from the electronics industry, research institutes and universities have joined forces to prepare this book. It does nothing less than provide a complete overview of the electrophysical fundamentals, the present state of the art and applications, as well as the future prospects of microwave tubes and systems. The book does the same for optoelectronics vacuum devices, electron and ion beam devices, light and X-ray emitters, particle accelerators and vacuum interrupters.

David Pozar, author of Microwave Engineering, Second Edition, has written a new text that introduces students to the field of wireless

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communications. This text offers a quantitative and, design-oriented presentation of the analog RF aspects of modern wireless telecommunications and data transmission systems from the antenna to the baseband level. Other topics include noise, intermodulation, dynamic range, system aspects of antennas and filter design. This unique text takes an integrated approach to topics usually offered in a variety of separate courses on topics such as antennas and propagation, microwave systems and circuits, and communication systems. This approach allows for a complete presentation of wireless telecommunications systems designs. The author's goal with this text is for the student to be able to analyze a complete radio system from the transmitter through the receiver front-end, and quantitatively evaluate factors.

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Suitable for a one-semester course, at the senior or first year graduate level. Note certain sections have been denoted as advanced topics, suitable for graduate level courses.

Microwave Journal

Integrated Silicon Optoelectronics

Interview Success

How to Create and Build Unique and Exciting Model Rockets That Work!

Handbook of Microwave and Radar Engineering

Motion Mountain - Vol. 1 - The Adventure of Physics

The book focuses on soft computing and its applications to solve real-world problems in different domains, ranging from medicine and health care, to supply chain management, image processing and

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cryptanalysis. It includes high-quality papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2018), organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India. Offering significant insights into soft computing for teachers and researchers alike, the book inspires more researchers to work in the field of soft computing. Electronic Components and Systems focuses on the principles and processes in the field of electronics and the integrated circuit. Covered in the book are

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basic aspects and physical fundamentals; different types of materials involved in the field; and passive and active electronic components such as capacitors, inductors, diodes, and transistors. Also covered in the book are topics such as the fabrication of semiconductors and integrated circuits; analog circuitry; digital logic technology; and microprocessors. The monograph is recommended for beginning electrical engineers who would like to know the fundamental concepts, theories, and processes in the related

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fields.

How high can animals jump?
What are the fastest thrown
balls? How fast can
aeroplanes and butterflies
fly? What does the sea level
tell us about the sun? What
are temperature and heat?
What is self-organization?
This free colour pdf on
introductory physics
guarantees to be
entertaining, surprising and
challenging on every page.
The text presents the best
stories, images, movies and
puzzles in mechanics,
gravity and thermodynamics -
with little mathematics,
always starting from
observations of everyday
life. This first volume also

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explains conservation laws and the reversibility of motion, explores mirror symmetry, and presents the principle of cosmic laziness: the principle of least action. This popular series has already more than 160 000 readers. If you are between the age of 16 and 106 and want to understand nature, you will enjoy it! To achieve wonder and thrill on every page, the first volume includes the various "colour of the bear" puzzles and the "picture on the wall" puzzle, explains about the many types of water waves, introduces the art of laying rope, tells about the the dangers of aeroplane

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toilets, explores the jumping height of different animals, presents the surprising motion of moguls on skiing slopes, explains why ultrasound imaging is not safe for a foetus, gives the ideal shape of skateboard half-pipes, estimates the total length of all capillaries in the human body, explains how it is possible to plunge a bare hand into molten lead, includes a film of an oscillating quartz inside a watch, includes the "handcuff puzzle" and the "horse pulling a rubber with a snail on it" puzzle, explains how jet pilots frighten civilians with

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Physics and Technology of Heterojunction Devices Components and Devices

Annotation In today's globally competitive wireless industry, the design-to-production cycle is critically important. The first of a two-volume set, this leading-edge book takes a practical approach to RF (radio frequency) circuit design, offering a complete understanding of the fundamental concepts practitioners need to know and use for their work in the field.

This book is the result of a long friendship, of a broad international co operation, and of a bold dream. It is the summary of work carried out by the authors, and several other wonderful people, during

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more than 15 years, across 3 continents, in the course of countless meetings, workshops and discussions. It shows that neither language nor distance can be an obstacle to close scientific cooperation, when there is unity of goals and true collaboration. When we started, we had very different approaches to handling the mysterious, almost magical world of asynchronous circuits. Some were more theoretical, some were closer to physical reality, some were driven mostly by design needs. In the end, we all shared the same belief that true Electronic Design Automation research must be solidly grounded in formal models, practically minded to avoid

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excessive complexity, and tested "in the field" in the form of experimental tools. The results are this book, and the CAD tool petrify. The latter can be downloaded and tried by anybody bold (or desperate) enough to tread into the clockless (but not lawless) domain of small-scale asynchronicity. The URL is <http://www.lsi.upc.es/jordic/petrify>. We believe that asynchronous circuits are a wonderful object, that abandons some of the almost militaristic law and order that governs synchronous circuits, to improve in terms of simplicity, energy efficiency and performance.

Fall, Flow and Heat
Passive Circuits and Systems

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Passive Circuits and Systems,
Volume 1

HEMTs and HBTs

What it Is, what it Does, how it
Works

Inventing the Cloud Century

Model Rocket Design and
Construction