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THE ANALYSIS AND DESIGN OF LINEAR CIRCUITS Textbook covering the fundamentals of circuit analysis and design, now with additional examples, exercises, and problems The Analysis and Design of Linear Circuits, 10th Edition, taps into engineering students desire to explore, create, and put their learning into practice by presenting linear circuit theory, with an emphasis on circuit analysis and how to evaluate competing designs. The text integrates active and passive linear circuits, allowing students to understand and design a wide range of circuits, solve analytical problems, and devise solutions to problems. The authors use both phasors and Laplace techniques for AC circuits, enabling better understanding of frequency response, filters, AC power, and transformers. The authors have increased the integration of MATLAB® and Multisim in the text and revised content to be up-to-date with technology when appropriate. The text uses a structured pedagogy where objectives are stated in each chapter opener and examples and exercises are developed so that the students achieve mastery of each objective. The available problems revisit each objective and a suite of problems of increasing complexity task the students to check their understanding. Topics covered in The Analysis and Design of Linear Circuits, 10th Edition, include: Basic circuit analysis, including element, connection, combined, and equivalent circuits, voltage and current division, and circuit reduction Circuit analysis techniques, including node-voltage and mesh-current analysis, linearity properties, maximum signal transfer, and interface circuit design Signal waveforms, including the step, exponential, and sinusoidal waveforms, composite waveforms, and waveform partial descriptors Laplace transforms, including signal waveforms and transforms, basic properties and pairs, and pole-zero and Bode diagrams Network functions, including network functions of one- and two-port circuits, impulse response, step response, and sinusoidal response An appendix that lists typical RLC component values and tolerances along with a number of reference tables and OP AMP building blocks that are foundational for analysis and design. With an overarching goal of instilling smart judgment surrounding design problems and innovative solutions, The Analysis and Design of Linear Circuits, 10th Edition, provides inspiration and motivation alongside an essential knowledge base. The text is designed for two semesters and is complemented with robust supplementary material to enhance various pedagogical approaches, including an Instructors Manual which features an update on how to use the book to complement the 2022-23 ABET accreditation criteria, 73 lesson outlines using the

new edition, additional Instructor Problems, and a Solutions Manual. These resources can be found on the companion website: <https://bcs.wiley.com/he-bcs/Books?action=index&bcsId=12533&itemId=1119913020>.

The Smart Interviewer In 20 years of specializing in interviews, management psychologist Brad Smart has successfully interviewed more than 4,000 candidates for selection or promotion, trained over 3,000 hiring managers in how to interview, and counseled thousands on how to manage their careers. The Smart Interviewer is a culmination of this vast experience. In it, Smart shares with you the secrets to successful interviewing. Written in a most readable style and featuring humorous cartoons, this book will immediately help you improve your interviewing effectiveness. You'll learn: * How to build excellent rapport * How to apply the TORC Technique for motivating the interviewee to be totally candid and reveal negatives * How to conduct productive reference calls * How to correctly interpret an interviewee's responses * How to prepare for an interview, how much time to take during an interview, how to focus your questions in ways that will reveal whether the interviewee meets your organization's needs or not--plus the latest hiring legalities you should be aware of The Smart Interviewer will help you avoid costly mishires and mispromotions and give you strategies and tools to hire productive, high-caliber employees that meet your company's needs.

This textbook is unique because of its in-depth treatment of the applications of wavelets and wavelet transforms to many areas, across many disciplines. The book is written to serve the needs of a one or two semester course at either the undergraduate or graduate level. The author uses a very simplified, accessible approach that de-emphasizes mathematical rigor. The presentation includes many diagrams to illustrate points being discussed and uses MATLAB for all of application code. The author reinforces concepts introduced in the book with easy to grasp review questions and problems, tailored to each specific chapter for better mastery of the subject matter. This book enables students to understand the fundamental concepts of wavelets and wavelet transforms, as well as how to use them for problem solutions in digital signal and image processing, mixed-signal testing, space applications, aerospace applications, biomedical, cyber security, homeland security and many other application areas.

A comprehensive introduction to the hardware, parameters, and architectures of RF/microwave wireless systems As the basis for some of the hottest technologies of the new millennium, radio frequency (RF) and microwave wireless systems rapidly propel us toward a future in which the transmission

of voice, video, and data communications will be possible anywhere in the world through the use of simple, handheld devices. This book provides scientists and engineers with clear, thorough, up-to-date explanations of all aspects of RF and microwave wireless systems, including general hardware components, system parameters, and architectures. Renowned authority Kai Chang covers both communication and radar/sensor systems and extends the discussion to other intriguing topics, from global positioning systems (GPS) to smart highways and smart automobiles. With an emphasis on basic operating principles, Dr. Chang reviews waves and transmission lines, examines modulation and demodulation and multiple-access techniques, and helps bridge the gap between RF/microwave engineering and communication system design. Ample practical examples of components and system configurations and nearly 300 illustrations and photographs complete this timely and indispensable resource. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department

Intended for first- and second-year undergraduates, this introduction to solid state chemistry includes practical examples of applications and modern developments to offer students the opportunity to apply their knowledge in real-life situations. The third edition of *Solid State Chemistry: An Introduction* has been comprehensively revised and updated. Building a foundation with a thorough description of crystalline structures, the book presents a wide range of the synthetic and physical techniques used to prepare and characterize solids. Other fundamental discussions include: bonding, superconductivity, and electrochemical, magnetic, optical, and conductive properties. The authors have added sections on fuel cells and electrochromic materials; conducting organic polymers, organic superconductors, and fullerenes; mesoporous solids and ALPOs; photonics; giant magnetoresistance (GMR) and colossal magnetoresistance (CMR); and p-wave (triplet) superconductors. The book also includes a completely new chapter, which examines the solid state chemical aspects of nanoscience. Each chapter contains a set of review questions and an accompanying solutions manual is available. *Solid State Chemistry: An Introduction, Third Edition* is written in a clear, approachable style that enhances the material by integrating its concepts in the context of current applications and areas of promising research.

This graduate text explains the physical properties and applications of a wide range of smart materials.

This extensively updated edition of the popular book offers a current overview of the ways smart cards address the computer security issues of today's varied applications. Brand-new discussions on multiapplication operating systems, computer networks, and the Internet are included to keep technical and business professionals abreast of the latest developments in this field.

Interest in latchup is being renewed with the evolution of complimentary metal-oxide semiconductor (CMOS) technology, metal-oxide-semiconductor field-effect transistor (MOSFET) scaling, and high-level system-on-chip (SOC) integration. Clear methodologies that grant protection from latchup, with insight into the physics, technology and circuit issues involved, are in increasing demand. This book describes CMOS and BiCMOS semiconductor technology and their sensitivity to present day latchup phenomena, from basic over-voltage and over-current conditions, single event latchup (SEL) and cable discharge events (CDE), to latchup domino phenomena. It contains chapters focusing on bipolar physics, latchup theory, latchup and guard ring characterization structures, characterization testing,

product level test systems, product level testing and experimental results. Discussions on state-of-the-art semiconductor processes, design layout, and circuit level and system level latchup solutions are also included, as well as: latchup semiconductor process solutions for both CMOS to BiCMOS, such as shallow trench, deep trench, retrograde wells, connecting implants, sub-collectors, heavily-doped buried layers, and buried grids - from single- to triple-well CMOS; practical latchup design methods, automated and bench-level latchup testing methods and techniques, latchup theory of logarithm resistance space, generalized alpha (a) space, beta (b) space, new latchup design methods-connecting the theoretical to the practical analysis, and; examples of latchup computer aided design (CAD) methodologies, from design rule checking (DRC) and logical-to-physical design, to new latchup CAD methodologies that address latchup for internal and external latchup on a local as well as global design level. Latchup acts as a companion text to the author's series of books on ESD (electrostatic discharge) protection, serving as an invaluable reference for the professional semiconductor chip and system-level ESD engineer. Semiconductor device, process and circuit designers, and quality, reliability and failure analysis engineers will find it informative on the issues that confront modern CMOS technology. Practitioners in the automotive and aerospace industries will also find it useful. In addition, its academic treatment will appeal to both senior and graduate students with interests in semiconductor process, device physics, computer aided design and design integration.

In the last fifty years, extensive studies have been carried out worldwide in the field of adaptive array systems. However, far from being a mature technology with little research left to tackle, there is seemingly unlimited scope to develop the fundamental characteristics and applications of adaptive antennas for future 3G and 4G mobile communications systems, ultra wideband wireless and satellite and navigation systems, and this informative text shows you how! Provides an accessible resource on adaptive array fundamentals as well as coverage of adaptive algorithms and advanced topics. Analyses the performance of various wideband beamforming techniques in wideband array processing. Comprehensively covers implementation issues related to such elements as circular arrays, channel modelling and transmit beam forming, highlighting the challenges facing a designer during the development phase. Supports practical implementation considerations with detailed case studies on wideband arrays, radar, sonar and biomedical imaging, terrestrial wireless systems and satellite communication systems. Includes examples and problems throughout to aid understanding. Companion website features Solutions Manual, Matlab Programs and Electronic versions of some figures. *Adaptive Array Systems* is essential reading for senior undergraduate and postgraduate students and researchers in the field of adaptive array systems. It will also have instant appeal to engineers and designers in industry engaged in developing and deploying the technology. This volume will also be invaluable to those working in radar, sonar and bio-medical applications.

Data Mining: Concepts and Techniques provides the concepts and techniques in processing gathered data or information, which will be used in various applications. Specifically, it explains data mining and the tools used in discovering knowledge from the collected data. This book is referred as the knowledge discovery from data (KDD). It focuses on the feasibility, usefulness, effectiveness, and scalability of techniques of large data sets. After describing data mining, this edition explains the methods of knowing, preprocessing, processing, and warehousing data. It then presents information about data warehouses, online analytical processing (OLAP), and data cube technology. Then, the

methods involved in mining frequent patterns, associations, and correlations for large data sets are described. The book details the methods for data classification and introduces the concepts and methods for data clustering. The remaining chapters discuss the outlier detection and the trends, applications, and research frontiers in data mining. This book is intended for Computer Science students, application developers, business professionals, and researchers who seek information on data mining. Presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects Addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields Provides a comprehensive, practical look at the concepts and techniques you need to get the most out of your data

The discipline of antenna theory has experienced vast technological changes. In response, Constantine Balanis has updated his classic text, *Antenna Theory*, offering the most recent look at all the necessary topics. New material includes smart antennas and fractal antennas, along with the latest applications in wireless communications. Multimedia material on an accompanying CD presents PowerPoint viewgraphs of lecture notes, interactive review questions, Java animations and applets, and MATLAB features. Like the previous editions, *Antenna Theory, Third Edition* meets the needs of electrical engineering and physics students at the senior undergraduate and beginning graduate levels, and those of practicing engineers as well. It is a benchmark text for mastering the latest theory in the subject, and for better understanding the technological applications. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

Describes thirty open source tools that are designed to improve Java development practices, including build tools, quality metrics tools, unit testing tools, issue management tools, and continuous integration tools.

The Updated Third Edition Provides a Systems Approach to Sustainable Green Energy Production and Contains Analytical Tools for the Design of Renewable Microgrids The revised third edition of *Design of Smart Power Grid Renewable Energy Systems* integrates three areas of electrical engineering: power systems, power electronics, and electric energy conversion systems. The book also addresses the fundamental design of wind and photovoltaic (PV) energy microgrids as part of smart-bulk power-grid systems. In order to demystify the complexity of the integrated approach, the author first presents the basic concepts, and then explores a simulation test bed in MATLAB® in order to use these concepts to solve a basic problem in the development of smart grid energy system. Each chapter offers a problem of integration and describes why it is important. Then the mathematical model of the problem is formulated, and the solution steps are outlined. This step is followed by developing a MATLAB® simulation test bed. This important book: Reviews the basic principles underlying power systems Explores topics including: AC/DC rectifiers, DC/AC inverters, DC/DC converters, and pulse-width modulation (PWM) methods Describes the fundamental concepts in the design and operation of smart grid power grids Supplementary material includes a solutions manual and PowerPoint presentations for instructors Written for undergraduate and graduate students in electric power systems engineering, researchers, and industry professionals, the revised third edition of *Design of Smart Power Grid Renewable Energy Systems* is a guide to the fundamental concepts of power grid

integration on microgrids of green energy sources.

Designed to support interactive teaching and computer assisted self-learning, this second edition of *Electrical Energy Conversion and Transport* is thoroughly updated to address the recent environmental effects of electric power generation and transmission, which have become more important together with the deregulation of the industry. New content explores different power generation methods, including renewable energy generation (solar, wind, fuel cell) and includes new sections that discuss the upcoming Smart Grid and the distributed power generation using renewable energy generation, making the text essential reading material for students and practicing engineers.

This book provides readers with an overview to the design of multiapplication smart card environments including the selection of a platform, the creation of applications and the logistics of initial deployment.

Intelligent networking provides value-added communications capabilities such as cost reduction, improved service delivery, increased variety, and quality of services Provides an all-encompassing self-contained treatment of adaptive modulation, adaptive antennas, and adaptive networking Provides an overview of the various CMA-based 3G wireless standards--UTRA, IMT 2000, and cdma 2000 Presents the principles of beamforming and the various techniques used for its implementation Quantifies the UTRA network capacity under various channel conditions

By presenting problem solving in purposeful and meaningful contexts, *MATHEMATICAL EXCURSIONS, 2/e*, provides students in the Liberal Arts course with a glimpse into the nature of mathematics and how it is used to understand our world. Highlights of the book include the proven Aufmann Interactive Method and multi-part Excursion exercises that emphasize collaborative learning. An extensive technology program provides instructors and students with a comprehensive set of support tools. This Enhanced Edition includes instant access to WebAssign, the most widely-used and reliable homework system. WebAssign presents over 500 problems, as well as links to relevant textbook sections, that help students grasp the concepts needed to succeed in this course. As an added bonus, the Start Smart Guide has been bound into this text. This guide contains instructions to help students learn the basics of WebAssign quickly. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This solution manual is a companion book written by the authors of "Understanding Physics like a Nerd without Becoming One & More". The character of the book solves the problems that were assigned at the end of each chapter. The authors believe their readers will be inspired by the tactics employed by Cassie to tackle the problems based on the lessons she learned from Professor James.

At one time, universities educated new generations and were a source of social change. Today colleges and universities are less places of public purpose, than agencies of personal advantage. *Re-making the American University* provides a penetrating analysis of the ways market forces have shaped and distorted the behaviors, purposes, and ultimately the missions of universities and colleges over the past half-century. The authors describe how a competitive preoccupation with rankings and markets published by the media spawned an admissions arms race that drains institutional resources and energies. Equally revealing are the depictions of the ways faculty distance themselves from their universities with the resulting increase in the number of administrators, which contributes substantially to institutional costs. Other chapters focus on the impact of intercollegiate ath-

letics on educational mission, even among selective institutions; on the unforeseen result of higher education's "outsourcing" a substantial share of the scholarly publication function to for-profit interests; and on the potentially dire consequences of today's zealous investments in e-learning. A central question extends through this series of explorations: Can universities and colleges today still choose to be places of public purpose? In the answers they provide, both sobering and enlightening, the authors underscore a consistent and powerful lesson—academic institutions cannot ignore the workings of the markets. The challenge ahead is to learn how to better use those markets to achieve public purposes.

The Student Solutions Manual to accompany Rogawski's Single Variable Calculus offers worked-out solutions to all odd-numbered exercises in the text.

This official Student Solutions Manual includes solutions to the odd-numbered exercises featured in the second edition of Steven Strogatz's classic text *Nonlinear Dynamics and Chaos: With Applications to Physics, Biology, Chemistry, and Engineering*. The textbook and accompanying Student Solutions Manual are aimed at newcomers to nonlinear dynamics and chaos, especially students taking a first course in the subject. Complete with graphs and worked-out solutions, this manual demonstrates techniques for students to analyze differential equations, bifurcations, chaos, fractals, and other subjects Strogatz explores in his popular book.

The valve industry has become increasingly digitized over the past five years. This revised second edition reflects those developments by focusing on the latest processing plant applications for "smart valve" technology. * Updated information on testing agencies and the latest code changes
 Contents: Introduction to Valves * Valve Selection Criteria * Manual Valves * Control Valves * Manual Operators and Actuators * New Smart Valve Technology * Smart Valve and Positioners * Valve Sizing * Actuator Sizing * Common Valve Problems * Abbreviations of Related Organizations and Standards
 Visible Light Communication (VLC) is an emerging wireless data transmission technology. Light is used simultaneously for illumination as well as for communication and/or positioning purposes. If fully networked, dubbed Li-Fi, VLC systems complement Wi-Fi access points. VLC is an incident of optical wireless communications (OWC). OWC systems provide high data security, are license-free, and may substitute radio systems when these either fail or are not permitted. VLC technology enhances smart lighting infrastructure and Internet-of-Things (IoT) use cases. LED-based Car-to-X communication is an enabling platform towards autonomous driving. The workbook covers exercises of OWC applications, fundamentals of illumination engineering, channel modeling, optical intensity modulation schemes, VLC standardization efforts, the software-defined radio concept, selection criteria of photonic devices, fundamental circuit designs, and visible light positioning. The training manual is written for students in electrical and information engineering or adjacent areas, as well as for engineers, information scientists, and physicists in research and development.

Min Wild explores the idiosyncratic world of satire in the eighteenth-century periodical, focusing on Christopher Smart's underexplored *Midwife, or Old Woman's Magazine*. In analysing Smart's adoption of a peculiarly female persona, 'Mary Midnight', Wild reveals a learned and ribald wit satirically engaging with questions of gender, politics, and culture. Wild also offers insight into the difficult position in which eighteenth-century writers found themselves as ideas on the nature of authorship were being transformed

Suspensions of magnetic nanoparticles or ferrofluids can be effectively controlled by magnetic fields, which opens up a fascinating field for basic research into fluid dynamics as well as a host of applications in engineering and medicine. The introductory chapter provides the reader with basic information on the structure, and magnetic and viscous properties of ferrofluids. The bulk of this monograph is based on the author's own research activity and deals with ferrohydrodynamics, especially with the magnetoviscous effects. In particular, the author studies in detail the interparticle interactions so far often neglected but of great importance in concentrated ferrofluids. The basic theory and the most recent experimental findings are presented, making the book interesting reading for physicists or engineers interested in smart materials.

In chapters contributed by 24 university & government laboratories, *Nanoengineering of Structural, Functional, and Smart Materials* combines wide-ranging research aimed at the development of multifunctional materials that are strong, lightweight, and versatile. This book explores promising and diverse approaches to the design of nanoscale

The field of flexible electronics has grown rapidly over the last two decades with diverse applications including wearable gadgets and medical equipment. This textbook comprehensively covers the fundamental aspects of flexible electronics along with materials and processing techniques. It discusses topics including flexural rigidity, flexible PCBs, organic semiconductors, nanostructured materials, material reliability, electronic reliability, crystalline and polymer materials, semiconductor processing, and flexible silicon in depth. The text covers advantages, disadvantages, and applications of processes such as sol-gel processing and ink-jet printing. Pedagogical features such as solved problems and unsolved exercises are interspersed throughout the text for better understanding. **FEATURES** Covers major areas such as materials, physics, processes, and applications of flexible electronics Contains homework problems for readers to understand concepts in an easy manner Discusses, in detail, various types of materials, such as flexible silicon, metal oxides, and organic semiconductors Explains the application of flexible electronics in displays, solar cells, and batteries Includes a section on stretchable electronics This textbook is primarily written for senior undergraduate and graduate students in electrical engineering, electronics, materials science, chemistry, and communication engineering for a course on flexible electronics. Teaching resources are available, including a solutions manual for instructors.

The *College Physics for AP(R) Courses* text is designed to engage students in their exploration of physics and help them apply these concepts to the Advanced Placement(R) test. This book is Learning List-approved for AP(R) Physics courses. The text and images in this book are grayscale.

Smart materials are of significant interest and this is the first textbook to provide a comprehensive graduate level view of topics that relate to this field. *Fundamentals of Smart Materials* consists of a workbook and solutions manual covering the basics of different functional material systems aimed at advanced undergraduate and postgraduate students. Topics include piezoelectric materials, magnetostrictive materials, shape memory alloys, mechanochromic materials, thermochromic materials, chemomechanical polymers and self-healing materials. Each chapter provides an introduction to the material, its applications and uses with example problems, fabrication and manufacturing techniques, conclusions, homework problems and a bibliography. Edited by a leading researcher in smart materials, the textbook can be adopted by teachers in materials science and engineering, chemistry,

physics and chemical engineering.

This study explores how Soviet leaders shaped the image cast by their state at home and abroad from the ascendancy of Khrushchev through the presidency of Yeltsin.

Keeping the mathematics to a minimum yet losing none of the required rigor, *Understanding Solid State Physics, Second Edition* clearly explains basic physics principles to provide a firm grounding in the subject. This new edition has been fully updated throughout, with recent developments and literature in the field, including graphene and the use of quasicrystalline materials, in addition to featuring new journalistic boxes and the reciprocal lattice. The author underscores the technological applications of the physics discussed and emphasizes the multidisciplinary nature of scientific research. After introducing students to solid state physics, the text examines the various ways in which atoms bond together to form crystalline and amorphous solids. It also describes the measurement of mechanical properties and the means by which the mechanical properties of solids can be altered or supplemented for particular applications. The author discusses how electromagnetic radiation interacts with the periodic array of atoms that make up a crystal and how solids react to heat on both atomic and macroscopic scales. She then focuses on conductors, insulators, semiconductors, and superconductors, including some basic semiconductor devices. The final chapter addresses the magnetic properties of solids as well as applications of magnets and magnetism. This accessible textbook provides a useful introduction to solid state physics for undergraduates who feel daunted by a highly mathematical approach. By relating the theories and concepts to practical applications, it shows how physics is used in the real world. Key features: Fully updated throughout, with new journalistic boxes and recent applications Uses an accessible writing style and format, offering journalistic accounts of interesting research, worked examples, self-test questions, and a helpful glossary of frequently used terms Highlights various technological applications of physics, from locomotive lights to medical scanners to USB flash drives

Antennas and Propagation for Wireless Communication covers the basics of wireless communication system design with emphasis on antennas and propagation. It contains information on antenna fundamentals and the latest developments in smart antennas, as well as the radiation effects of handheld devices. *Antennas and Propagation for Wireless Communication* provides a complete discussion of all the topics important to the design of wireless communication systems. Written by acknowledged authorities in their respective fields, the book deals with practical applications and presents real world examples. A solutions manual for college adopters accompanies the text. Ideal for engineers working in communication, antennas, and propagation for telecomm, military, and aerospace applications, as well as students of electrical engineering, this book covers all topics needed for a complete system design.

A comprehensive introduction to the embryonic field of smart materials and structures, this text also

presents a review of the sub-disciplines of the field, focusing on electro-rheological fluids, piezo-electric materials, shape-memory materials and fibre-optics in particular.

This volume covers Chapters 1--20 of the main text. The Student's Solutions Manual provides detailed, step-by-step solutions to more than half of the odd-numbered end-of-chapter problems from the text. All solutions follow the same four-step problem-solving framework used in the textbook.

With contributions from an internationally-renowned group of experts, this book uses a multidisciplinary approach to review recent developments in the field of smart sensor systems, providing complete coverage of all important system and design aspects, their building blocks and methods of signal processing. It examines topics over the whole range of sensor technology from the theory and constraints of basic elements, the applied techniques and electronic, up to the level of application-orientated issues. Developed as a complementary volume to 'Smart Sensor Systems' (Wiley 2008), which introduces the theoretical foundations, this volume focuses on practical applications, including: State-of-the-art techniques for designing smart sensors and smart sensor systems, with measurement techniques at system level, such as collaboration and trimming, and impedance-measurement techniques. Sensing elements and sensor systems for the measurement of mechanical quantities, and microarrays for DNA detection. Circuitdesign for sensor systems, such as the design of low-noise amplifiers, and measurement techniques at device level, such as dynamic offset cancellation and optical imagers. Implantable smart sensors for bio-medical applications and automotive sensors. A supplementary website hosts case studies and a solutions manual to the problems Smart Sensor Systems: Emerging Technologies and Applications will greatly benefit final year undergraduate and postgraduate students in the areas of electrical, mechanical and chemical engineering, and physics. Professional engineers and researchers in the microelectronics industry, including microsystem developers, will also find this a thorough and useful volume.

Empirically based, the daily experience of adolescent black females is explicated within an explanatory model of social context and developmental theory. The author argues that adolescence must be seen from strengths and health perspectives. Self-relatedness or intersubjectivity expressed in assertion, empathy, and recognition is the core matrix of development where social contextual responses can be adaptive or maladaptive.

This book revisits many of the problems encountered in introductory quantum mechanics, focusing on computer implementations for finding and visualizing analytical and numerical solutions. It subsequently uses these implementations as building blocks to solve more complex problems, such as coherent laser-driven dynamics in the Rubidium hyperfine structure or the Rashba interaction of an electron moving in 2D. The simulations are highlighted using the programming language Mathematica. No prior knowledge of Mathematica is needed; alternatives, such as Matlab, Python, or Maple, can also be used.