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Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation - Robert B. Northrop 2003-12-29

This book introduces the basic mathematical tools used to describe noise and its propagation through linear systems and provides a basic description of the improvement of signal-to-noise ratio by signal averaging and linear filtering. The text also demonstrates how op amps are the keystone of modern analog signal conditioning systems design, and il

The Onion Book of Known Knowledge - The Onion 2012-10-23

Are you a witless cretin with no reason to live? Would you like to know more about every piece of knowledge ever? Do you have cash? Then congratulations, because just in time for the death of the print industry as we know it comes the final book ever published, and the only one you will ever need: The Onion's compendium of all things known. Replete with an astonishing assemblage of facts, illustrations, maps, charts, threats, blood, and additional fees to edify even the most simple-minded book-buyer, THE ONION BOOK OF KNOWN KNOWLEDGE is packed with valuable information—such as the life stages of an Aunt; places to kill one's self in Utica, New York; and the dimensions of a female bucket, or "pail." With hundreds of entries for all 27 letters of the alphabet, THE ONION BOOK OF KNOWN KNOWLEDGE must be purchased immediately to avoid the sting of eternal ignorance.

Organization Theory and Design - Jonathan Murphy 2014

Organizing involves continuous challenges in the face of uncertainty and change. How is globalization impacting organizations? How will new strategies for a turbulent world affect organizational design? In this second edition of *Organization Theory and Design*, developed for students in the UK, Europe, the Middle East and Africa, respected academics Jonathan Murphy and Hugh Willmott continue to add an international perspective to Richard L. Daft's landmark text. Together they tackle these questions in a comprehensive, clear and accessible study of the subject.

MOS/LSI Design and Application - William N. Carr 1972

Electronic Circuits - Mike Tooley 2019-11-08

Electronics explained in one volume, using both theoretical and practical applications. Mike Tooley provides all the information required to get to grips with the fundamentals of electronics, detailing the underpinning knowledge necessary to appreciate the operation of a wide range of electronic circuits, including amplifiers, logic circuits, power supplies and oscillators. The 5th edition includes an additional chapter showing how a wide range of useful electronic applications can be developed in conjunction with the increasingly popular Arduino microcontroller, as well as a new section on batteries for use in electronic equipment and some additional/updated student assignments. The book's content is matched to the latest pre-degree level courses (from Level 2 up to, and including, Foundation Degree and HND), making this an invaluable reference text for all study levels, and its broad coverage is combined with practical case studies based in real-world engineering contexts. In addition, each chapter includes a practical investigation designed to reinforce learning and provide a basis for further practical work. A companion website at <http://www.key2electronics.com> offers the reader a set of spreadsheet design tools that can be used to simplify circuit calculations, as well as circuit models and templates that will enable virtual simulation of circuits in the book. These are accompanied by online self-test multiple choice questions for each chapter with automatic marking, to enable students to continually monitor their own progress and understanding. A bank of online questions for lecturers to set as assignments is also available.

The Archive and the Repertoire - Diana Taylor 2003-08-22

In *The Archive and the Repertoire* preeminent performance studies scholar Diana Taylor provides a new understanding of the vital role of

performance in the Americas. From plays to official events to grassroots protests, performance, she argues, must be taken seriously as a means of storing and transmitting knowledge. Taylor reveals how the repertoire of embodied memory—conveyed in gestures, the spoken word, movement, dance, song, and other performances—offers alternative perspectives to those derived from the written archive and is particularly useful to a reconsideration of historical processes of transnational contact. *The Archive and the Repertoire* invites a remapping of the Americas based on traditions of embodied practice. Examining various genres of performance including demonstrations by the children of the disappeared in Argentina, the Peruvian theatre group Yuyachkani, and televised astrological readings by Univision personality Walter Mercado, Taylor explores how the archive and the repertoire work together to make political claims, transmit traumatic memory, and forge a new sense of cultural identity. Through her consideration of performances such as Coco Fusco and Guillermo Gómez-Peña's show *Two Undiscovered Amerindians Visit . . .*, Taylor illuminates how scenarios of discovery and conquest haunt the Americas, trapping even those who attempt to dismantle them. Meditating on events like those of September 11, 2001 and media representations of them, she examines both the crucial role of performance in contemporary culture and her own role as witness to and participant in hemispheric dramas. *The Archive and the Repertoire* is a compelling demonstration of the many ways that the study of performance enables a deeper understanding of the past and present, of ourselves and others.

The Craft and Science of Coffee - Britta Folmer 2016-12-16

The Craft and Science of Coffee follows the coffee plant from its origins in East Africa to its current role as a global product that influences millions of lives through sustainable development, economics, and consumer desire. For most, coffee is a beloved beverage. However, for some it is also an object of scientific study, and for others it is approached as a craft, both building on skills and experience. By combining the research and insights of the scientific community and expertise of the crafts people, this unique book brings readers into a sustained and inclusive conversation, one where academic and industrial thought leaders, coffee farmers, and baristas are quoted, each informing and enriching each other. This unusual approach guides the reader on a journey from coffee farmer to roaster, market analyst to barista, in a style that is both rigorous and experience based, universally relevant and personally engaging. From on-farming processes to consumer benefits, the reader is given a deeper appreciation and understanding of coffee's complexity and is invited to form their own educated opinions on the ever changing situation, including potential routes to further shape the coffee future in a responsible manner. Presents a novel synthesis of coffee research and real-world experience that aids understanding, appreciation, and potential action. Includes contributions from a multitude of experts who address complex subjects with a conversational approach. Provides expert discourse on the coffee value chain, from agricultural and production practices, sustainability, post-harvest processing, and quality aspects to the economic analysis of the consumer value proposition. Engages with the key challenges of future coffee production and potential solutions.

The Essentials of Supply Chain Management - Hokey Min 2015-05-23

This is today's indispensable introduction to supply chain management for today's students and tomorrow's managers - not yesterday's! Prof. Hokey Min focuses on modern business strategies and applications - transcending obsolete logistics- and purchasing-driven approaches still found in many competitive books. Focusing on outcomes throughout, *The Essentials of Supply Chain Management* shows how to achieve continuous organizational success by applying modern supply chain concepts. Reflecting his extensive recent experience working with

leading executives and managers, Min teaches highly-effective methods for supply chain thinking and problem-solving. You'll master an integrated Total System Approach that places functions like inventory control and transportation squarely in context, helping you smoothly integrate internal and external functions, and establish effective inter-firm cooperation and strategic alliances across complex supply chains. Coverage includes: Understanding modern sourcing, logistics, operations, sales, and marketing – and how they fit together Using modern supply chain methods to improve customer satisfaction and quality Working with cutting-edge supply chain technology and metrics Moving towards greater sustainability and more effective risk management Working with core analytical tools to evaluate supply chain practices and measure performance Legal, ethical, cultural, and environmental/sustainability aspects of modern supply chain operations How to build a career in global supply chain management The Essentials of Supply Chain Management will be an indispensable resource for all graduate and undergraduate students in supply chain management, and for every practitioner pursuing professional certification or executive education in the field.

Circuits and Networks - Anant Sudhakar 2006

Part of the McGraw-Hill Core Concepts in Electrical Engineering Series, Circuits and Networks: Analysis and Synthesis designed as a textbook for an introductory circuits course at the intermediate undergraduate level. The book may also be appealing to a non-major survey course in electrical engineering course as well. A primary goal in Circuits and Networks is to establish a firm understanding of the basic laws of electrical circuits, and to provide students with a working knowledge of the commonly used methods of analysis in electrical engineering. This is a concise, less expensive alternative. This series is edited by Dick Dorf.

Semiconductor Laser Engineering, Reliability and Diagnostics -

Peter W. Epperlein 2013-03-18

This reference book provides a fully integrated novel approach to the development of high-power, single-transverse mode, edge-emitting diode lasers by addressing the complementary topics of device engineering, reliability engineering and device diagnostics in the same book, and thus closes the gap in the current book literature. Diode laser fundamentals are discussed, followed by an elaborate discussion of problem-oriented design guidelines and techniques, and by a systematic treatment of the origins of laser degradation and a thorough exploration of the engineering means to enhance the optical strength of the laser. Stability criteria of critical laser characteristics and key laser robustness factors are discussed along with clear design considerations in the context of reliability engineering approaches and models, and typical programs for reliability tests and laser product qualifications. Novel, advanced diagnostic methods are reviewed to discuss, for the first time in detail in book literature, performance- and reliability-impacting factors such as temperature, stress and material instabilities. Further key features include: practical design guidelines that consider also reliability related effects, key laser robustness factors, basic laser fabrication and packaging issues; detailed discussion of diagnostic investigations of diode lasers, the fundamentals of the applied approaches and techniques, many of them pioneered by the author to be fit-for-purpose and novel in the application; systematic insight into laser degradation modes such as catastrophic optical damage, and a wide range of technologies to increase the optical strength of diode lasers; coverage of basic concepts and techniques of laser reliability engineering with details on a standard commercial high power laser reliability test program. Semiconductor Laser Engineering, Reliability and Diagnostics reflects the extensive expertise of the author in the diode laser field both as a top scientific researcher as well as a key developer of high-power highly reliable devices. With invaluable practical advice, this new reference book is suited to practising researchers in diode laser technologies, and to postgraduate engineering students. Dr. Peter W. Epperlein is Technology Consultant with his own semiconductor technology consulting business Pwe-Photonics Electronics-Issue Resolution in the UK. He looks back at a thirty years career in cutting edge photonics and electronics industries with focus on emerging technologies, both in global and start-up companies, including IBM, Hewlett-Packard, Agilent Technologies, Philips/NXP, Essient Photonics and IBM/JDSU Laser Enterprise. He holds Pre-Dipl. (B.Sc.), Dipl. Phys. (M.Sc.) and Dr. rer. nat. (Ph.D.) degrees in physics, magna cum laude, from the University of Stuttgart, Germany. Dr. Epperlein is an internationally recognized expert in compound semiconductor and diode laser technologies. He has accomplished R&D in many device areas such as semiconductor lasers, LEDs, optical

modulators, quantum well devices, resonant tunneling devices, FETs, and superconducting tunnel junctions and integrated circuits. His pioneering work on sophisticated diagnostic research has led to many world's first reports and has been adopted by other researchers in academia and industry. He authored more than seventy peer-reviewed journal papers, published more than ten invention disclosures in the IBM Technical Disclosure Bulletin, has served as reviewer of numerous proposals for publication in technical journals, and has won five IBM Research Division Awards. His key achievements include the design and fabrication of high-power, highly reliable, single mode diode lasers. Book Reviews "Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices". By Peter W. Epperlein Prof. em. Dr. Heinz Jäckel, High Speed Electronics and Photonics, Swiss Federal Institute of Technology ETH Zürich, Switzerland The book "Semiconductor Laser Engineering, Reliability and Diagnostics" by Dr. P.W. Epperlein is a landmark in the recent literature on semiconductor lasers because it fills a longstanding gap between many excellent books on laser theory and the complex and challenging endeavor to fabricate these devices reproducibly and reliably in an industrial, real world environment. Having worked myself in the early research and development of high power semiconductor lasers, I appreciate the competent, complete and skillful presentation of these three highly interrelated topics, where small effects have dramatic consequences on the success of a final product, on the ultimate performance and on the stringent reliability requirements, which are the name of the game. As the title suggests the author addresses three tightly interwoven and critical topics of state-of-the-art power laser research. The three parts are: device and mode stability engineering (chapter 1, 2), reliability mechanisms and reliability assessment strategies (chapter 3, 4, 5, 6) and finally material and device diagnostics (chapter 7, 8, 9) all treated with a strong focus on the implementation. This emphasis on the complex practical aspects for a large-scale power laser fabrication is a true highlight of the book. The subtle interplay between laser design, reliability strategies, advanced failure analysis and characterization techniques are elaborated in a very rigorous and scientific way using a very clear and easy to read representation of the complex interrelation of the three major topics. I will abstain from trying to provide a complete account of all the topics but mainly concentrate on the numerous highlights. The first part 1 "Laser Engineering" is divided in two chapters on basic electronic-optical, structural, material and resonator laser engineering on the one side, and on single mode control and stability at very high, still reliable power-levels with the trade-off between mirror damage, single mode stability on the other side. To round up the picture less well-known concepts and the state-of-the-art of large-area lasers, which can be forced into single-mode operation, are reviewed carefully. The subtle and complex interplay, which is challenging to optimize for a design for reliability and low stress as a major boundary condition is crucial for the design. The section gives a rather complete and well-referenced account of all relevant aspects, relations and trade-offs for understanding the rest of the book. The completeness of the presentation on power laser diode design based on basic physical and plausible arguments is mainly based on analytic mathematical relations as well as experiments providing a new and well-balanced addition for the power diode laser literature in particular. Modern 2D self-consistent electro-optical laser modeling including carrier hole burning and thermal effects – this is important because the weak optical guiding and gain-discrimination depend critically on rather small quantities and effects, which are difficult to optimize experimentally – is used in the book for simulation results, but is not treated separately. The novel and really original, "gap-filling" bulk of the book is elaborated by the author in a very clear way in the following four chapters in the part 2 "Laser Reliability" on laser degradation physics and mirror design and passivation at high power, followed then by two very application oriented chapters on reliability design engineering and practical reliability strategies and implementation procedures. This original combination of integral design and reliability aspects – which are mostly neglected in standard literature – is certainly a major plus of this book. I liked this second section as a whole, because it provides excellent insights in degradation physics on a high level and combines it in an interesting and skillful way with the less "glamorous" (unfortunately) but highly relevant reliability science and testing strategies, which is particularly important for devices operating at extreme optical stresses with challenging lifetime requirements in a real word environment. Finally, the last part 3 "Laser Diagnostics" comprising three chapters, is devoted mainly to advanced experimental diagnostics techniques for

material integrity, mechanical stress, deep level defects, various dynamic laser degradation effects, surface- and interface quality, and most importantly heating and disordering of mirrors and mirror coatings. The topics of characterization techniques comprising micro-Raman- and micro-thermoreflectance-probing, 2K photoluminescence spectroscopy, micro-electroluminescence and photoluminescence scanning, and deep-level-transient spectroscopy have been pioneered by the author for the specific applications over many years guaranteeing many competent and well represented insights. These techniques are brilliantly discussed and the information distributed in many articles by the author has been successfully unified in a book form. In my personal judgment and liking, I consider the parts 2 and 3 on reliability and diagnostics as the most valuable and true novel contribution of the book, which in combination with the extremely well-covered laser design of part 1 clearly fill the gap in the current diode laser literature, which in this detail has certainly been neglected in the past. In summary, I can highly recommend this excellent, well-organized and clearly written book to readers who are already familiar with basic diode laser theory and who are active in the academic and industrial fabrication and characterization of semiconductor lasers. Due to its completeness, it also serves as an excellent reference of the current state-of-the-art in reliability engineering and device and material diagnostics. Needless to mention that the quality of the book, its representations and methodical structure meet the highest expectation and are certainly a tribute from the long and broad experience of the author in academic laser science and the industrial commercialization of high power diode lasers. In my opinion, this book was a pleasure to read and due to its quality and relevance deserves a large audience in the power diode laser community! Prof. em. Dr. Heinz Jäckel, High Speed Electronics and Photonics, Swiss Federal Institute of Technology ETH Zürich, Switzerland June 16, 2013

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 "Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices". By Peter W. Epperlein Dr. Chung-en Zah, Research Director, Semiconductor Technologies Research, S&T Division, Corning Incorporate, Corning NY, USA This book covers for the first time the three closely interrelated key laser areas of engineering (design), reliability and diagnostics in one book, written by the well-known practitioner in cutting-edge optoelectronics industries, Dr. Peter W. Epperlein. The book closes the gap in the current book literature and is thus a unique and excellent example of how to merge design, reliability and diagnostics aspects in a very professional, profound and complete manner. All physical and technological principles, concepts and practical aspects required for developing and fabricating highly-reliable high-power single-mode laser products are precisely specified and skilfully formulated along with all the necessary equations, figures, tables and worked-out examples making it easy to follow through the nine chapters. Hence, this unique book is a milestone in the diode laser literature and is an excellent reference book not only for diode laser researchers and engineers, but also diode laser users. The engineering part starts with a very informative and clear, well-presented account of all necessary basic diode laser types, principles, parameters and characteristics for an easy and quick understanding of laser functionality within the context of the book. Along with an elaborate and broad discussion of relevant laser material systems, applications, typical output powers, power-limiting factors and reliability tradeoffs, basic fabrication and packaging technologies, this excellent introductory section is well suited to become quickly and easily familiar with practical aspects and issues of diode laser technologies. Of special importance and high usefulness is the first analytic and quantitative discussion in a book on issues of coupling laser power into optical single mode fibers. The second section discusses in a well-balanced, competent and skilful way waveguide topics such as basic high-power design approaches, transverse vertical and lateral waveguide concepts, stability of the fundamental transverse lateral mode and fundamental mode waveguide optimization techniques by considering detrimental effects such as heating, carrier injection, spatial hole burning, lateral current spreading and gain profile variations. Less well-known approaches to force large-area lasers into a single mode operation are well-identified and carefully discussed in depth and breadth. All these topics are elaborated in a very complete, rigorous and scientific way and are clearly articulated and easy to read. In particular, the book works out the complex interaction between the many different effects to optimize high-power single-mode performance at ultimate reliability and thus is of great benefit to every researcher and engineer engaged in this diode laser field. Another novelty and highlight is, for the first time ever

in book form, a comprehensive yet concise discussion of diode laser reliability related issues. These are elaborated in four distinct chapters comprising laser degradation physics and modes, optical strength enhancement approaches including mirror passivation/coating and non-absorbing mirror technologies, followed by two highly relevant product-oriented chapters on reliability design engineering concepts and techniques and an elaborate reliability test plan for laser chip and module product qualification. This original and novel approach to link laser design to reliability aspects and requirements provides both, most useful insight into degradation processes such as catastrophic optical mirror damage on a microscopic scale, and a wide selection of effective remedial actions. These accounts, which are of highest significance for lasers operating at the optical stress limit due to extremely high output power densities and most demanding lifetime requirements are very professionally prepared and discussed in an interesting, coherent and skilful manner. The diagnostics part, consisting of three very elaborate chapters, is most unique and novel with respect to other diode laser books. It discusses for the first time ever on a very high level and in a competent way studies on material integrity, impurity trapping effects, mirror and cavity temperatures, surface- and interface quality, mirror facet disorder effects, mechanical stress and facet coating instability, and diverse laser temperature effects, dynamic laser degradation effects and mirror temperature maps. Of highest significance to design, performance and reliability are the various correlations established between laser device and material parameters. The most different and sophisticated experiments, carried out by the author at micrometer spatial resolutions and at temperatures as low as 2K, provide highly valuable insights into laser and material quality parameters, and reveal for the first time the origins of high power limitations on an atomic scale due to local heating effects and deep level defects. It is of great benefit, that the experimental techniques such as Raman spectroscopy, various luminescence techniques, thermoreflectance and deep-level transient spectroscopy, pioneered by the author for the specific experiments on lasers, are discussed with great expertise in depth and breadth, and the numerous paper articles published by the author are now represented in this book. The book has an elaborate table of contents and index, which are very useful, over 200 illustrative figures and tables, and extensive lists of references to all technical topics at the end of each of the nine chapters, which make it easy to follow from cover to cover or by jumping in at random areas of special interest. Moreover, experimental and theoretical concepts are always illustrated by practical examples and data. I can highly recommend this extremely relevant, well-structured and well-formulated book to all practising researchers in industrial and academic diode laser R&D environments and to post-graduate engineering students interested in the actual problems of designing, manufacturing, testing, characterising and qualifying diode lasers. Due to its completeness and novel approach to combine design, reliability and diagnostics in the same book, it can serve as an ideal reference book as well, and it deserves to be welcomed worldwide by the addressed audience. Dr. Chung-en Zah, Research Director, Semiconductor Technologies Research, S&T Division, Corning Incorporate, Corning NY, USA

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 "Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices". By Peter W. Epperlein Cordinatore Prof. Lorenzo Pavesi, UNIVERSITÀ DEGLI STUDI DI TRENTO, Dipartimento di Fisica / Laboratorio di Nanoscienze This book represents a well thought description of three fundamental aspects of laser technology: the functioning principles, the reliability and the diagnostics. From this point of view, and, as far as I know, this is a unique example of a book where all these aspects are merged together resulting in a well-balanced presentation. This helps the reader to move with ease between different concepts since they are presented in a coherent manner and with the same terminology, symbols and definitions. The book reads well. Despite the subtitle indicates that it is a practical approach, the book is also correct from a formal point of view and presents the necessary equations and derivations to understand both the physical mechanisms and the practicalities via a set of useful formulas. In addition, there is the more important aspect of many real-life examples of how a laser is actually manufactured and which the relevant parameters that determine its behaviour are. It impresses the amounts of information that are given in the book: this would be more typical of a thick handbook on semiconductor laser than of an agile book. Dr. Epperlein was able to identify the most important concepts and to present them in a clear though concise way. I am teaching a course on

Optoelectronics and I'm going to advise students to refer to this book, because it has all the necessary concepts and derivations for a systematic understanding of semiconductor lasers with many worked-out examples, which will help the student to grasp the actual problems of designing, manufacturing, testing and using semiconductor lasers. All the various concepts are joined to very useful figures, which, if provided to instructors as files, can be a useful add-on for the use of the book as text for teaching. Concepts are always detailed with numbers to give a feeling of their practical use. In conclusion, I do find the book suitable for my teaching duties and will refer it to my students. Prof. Dr. Lorenzo Pavesi, Head of the Department of Physics, Head of the Nanoscience Laboratory, University of Trento, Italy 31 May 2013

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"Semiconductor Laser Engineering, Reliability and Diagnostics: A Practical Approach to High Power and Single Mode Devices". By Peter W. Epperlein Robert W. Herrick, Ph.D., Senior Component Reliability Engineer, Intel Corp., Santa Clara, California, USA Dr. Epperlein has done the semiconductor laser community a great service, by releasing the most complete book on the market on the practical issues of how to make reliable semiconductor lasers. While dozens of books have been written over the past couple of decades on semiconductor laser design, only a handful have been written on semiconductor laser reliability. Prior to the release of this book, perhaps 40% of the material could be obtained elsewhere by combining five books: one on laser design, one on laser reliability, one on reliability calculations, and a couple of laser review books. Another 40% could be pieced together by collecting 50-100 papers on the subjects of laser design, laser fabrication, characterization, and reliability. The remaining 20% have not previously been covered in any comprehensive way. Only the introductory material in the first half of the first chapter has good coverage elsewhere. The large majority of the knowledge in this book is generally held as "trade secret" by those with the expertise in the field, and most of those in the know are not free to discuss. The author was fortunate enough to work for the first half of his career in the IBM research labs, with access to unparalleled resources, and the ability to publish his work without trade secret restrictions. The results are still at the cutting edge of our understanding of semiconductor laser reliability today, and go well beyond the empirical "black box" approach many use of "try everything, and see what works." The author did a fine job of pulling together material from many disparate fields. Dr. Epperlein has particular expertise in high power single mode semiconductor lasers, and those working on those type of lasers will be especially interested in this book, as there has never been a book published on the fabrication and qualification of such lasers before. But those in almost any field of semiconductor lasers will learn items of interest about device design, fabrication, reliability, and characterization. Unlike most other books, which intend to convey the scientific findings or past work of the author, this one is written more as a "how to" manual, which should make it more accessible and useful to development engineers and researchers in the field. It also has over 200 figures, which make it easier to follow. As with many books of this type, it is not necessary to read it from cover-to-cover; it is best skimmed, with deep diving into any areas of special interest to the reader. The book is remarkable also for how comprehensive it is - even experts will discover something new and useful. Dr. Epperlein's book is an essential read for anyone looking to develop semiconductor lasers for anything other than pure research use, and I give it my highest recommendation. Robert W. Herrick, Ph.D., Senior Component Reliability Engineer, Intel Corp., Santa Clara, California, USA

The Information - James Gleick 2011-03-01

From the bestselling author of the acclaimed *Chaos and Genius* comes a thoughtful and provocative exploration of the big ideas of the modern era: information, communication, and information theory. Acclaimed science writer James Gleick presents an eye-opening vision of how our relationship to information has transformed the very nature of human consciousness. A fascinating intellectual journey through the history of communication and information, from the language of Africa's talking drums to the invention of written alphabets; from the electronic transmission of code to the origins of information theory, into the new information age and the current deluge of news, tweets, images, and blogs. Along the way, Gleick profiles key innovators, including Charles Babbage, Ada Lovelace, Samuel Morse, and Claude Shannon, and reveals how our understanding of information is transforming not only how we look at the world, but how we live. A New York Times Notable Book A Los Angeles Times and Cleveland Plain Dealer Best Book of the Year

Winner of the PEN/E. O. Wilson Literary Science Writing Award

The Goodriches - Dane Starbuck 2001

When local author Dane Starbuck set out several years ago to write the biography of Pierre Goodrich, scion of one of Indiana's most prominent twentieth-century families, he soon discovered that it was impossible to really understand Pierre Goodrich without also closely examining his family. Starbuck's years of research culminated in *The Goodriches: An American Family*, now available from Liberty Fund. This work is a revealing window into the founding ideals of both Indiana and our country, and how our founders meant these ideals to be lived. *The Goodriches: An American Family* begins with the birth of James P. Goodrich in 1864 and continues through the death of his son Pierre F. Goodrich in 1973. As the story of two fascinating and fiercely individualistic men, it is compelling reading, but as author Dane Starbuck says in the preface, "the later chapters of this book are as much a social commentary on American life in the twentieth century as parts of a biography of two accomplished men." In his foreword to *The Goodriches: An American Family*, James M. Buchanan, Nobel laureate in economics and celebrated Liberty Fund author, says, "The Indiana Goodriches are an American family whose leading members, James and Pierre, helped to shape the American century. . . . This biography makes us recognize what is missing from the millennial setting in which we find ourselves. We have lost the 'idea of America,' both as a motivation for action and as a source of emotional self-confidence. We have lost that which the Goodriches possessed." What did the Goodrich family "possess" which made them so unique? A belief in the power of knowledge, the importance of education, and a strong work ethic combined to imbue the Goodrich family with a distinctive sense of civic duty. James Goodrich served as governor of Indiana from 1917 to 1921 and as adviser to Presidents Warren G. Harding, Calvin Coolidge, and Herbert Hoover. During his eulogy of James Goodrich, the Reverend Gustav Papperman explained, "The Governor felt that he had been given talents that were a trust, that he was to administer them faithfully. . . ." According to author Dane Starbuck, "Education was a large part of the Goodriches' work ethos. . . . The family viewed education as a process by virtue of which the individual remained informed, made better business decisions, learned the importance of citizenship, and was given an opportunity for individual self-improvement. Therefore, work and education became the centerpieces of the Goodrich family's ethical and practical life." In later years, Pierre Goodrich, successful businessman and entrepreneur, would set aside a portion of his estate to found Liberty Fund because he believed that the principles of liberty on which our nation was founded need to be constantly kept before the public.

A Moveable Feast - Ernest Hemingway 2021-08-31

"A Moveable Feast" by Ernest Hemingway. Published by Good Press. Good Press publishes a wide range of titles that encompasses every genre. From well-known classics & literary fiction and non-fiction to forgotten—or yet undiscovered gems—of world literature, we issue the books that need to be read. Each Good Press edition has been meticulously edited and formatted to boost readability for all e-readers and devices. Our goal is to produce eBooks that are user-friendly and accessible to everyone in a high-quality digital format.

Electronic Circuit Analysis and Design - Donald A. Neamen 2001

This junior-level electronics text provides a foundation for analyzing and designing analog and digital electronic circuits. Computer analysis and design are recognized as significant factors in electronics throughout the book. The use of computer tools is presented carefully, alongside the important hand analysis and calculations. The author, Don Neamen, has many years experience as an engineering educator and an engineer. His experience shines through each chapter of the book, rich with realistic examples and practical rules of thumb. The book is divided into three parts. Part 1 covers semiconductor devices and basic circuit applications. Part 2 covers more advanced topics in analog electronics, and Part 3 considers digital electronic circuits.

Introduction to Complexity and Complex Systems - Robert B. Northrop 2010-12-10

The boundaries between simple and complicated, and complicated and complex system designations are fuzzy and debatable, even using quantitative measures of complexity. However, if you are a biomedical engineer, a biologist, physiologist, economist, politician, stock market speculator, or politician, you have encountered complex systems. Furthermore, your success depends on your ability to successfully interact with and manage a variety of complex systems. In order not to be blindsided by unexpected results, we need a systematic, comprehensive way of analyzing, modeling, and simulating complex

systems to predict non-anticipated outcomes. In its engaging first chapters, the book introduces complex systems, Campbell's Law, and the Law of Unintended Consequences, and mathematics necessary for conversations in complex systems. Subsequent chapters illustrate concepts via commonly studied biological mechanisms. The final chapters focus on higher-level complexity problems, and introduce complexity in economic systems. Designed as a reference for biologists and biological engineers, *Introduction to Complexity and Complex Systems* lends itself to use in a classroom course to introduce advanced students studying biomedical engineering, biophysics, or physiology to complex systems. Engaging and illustrative, this book aids scientists and decision makers in managing biological complexity and complex systems. *Electronic Circuits - II* - R. J. Watts 1947

Digital Principles and Applications - Albert Paul Malvino 1986

The Book of Ser Marco Polo, the Venetian, Concerning the Kingdoms and Marvels of the East - Marco Polo 1903

The Invisible Rainbow - Arthur Firstenberg 2020-03-09

Electricity has shaped the modern world. But how has it affected our health and environment? Over the last 220 years, society has evolved a universal belief that electricity is 'safe' for humanity and the planet. Scientist and journalist Arthur Firstenberg disrupts this conviction by telling the story of electricity in a way it has never been told before--from an environmental point of view--by detailing the effects that this fundamental societal building block has had on our health and our planet. In *The Invisible Rainbow*, Firstenberg traces the history of electricity from the early eighteenth century to the present, making a compelling case that many environmental problems, as well as the major diseases of industrialized civilization--heart disease, diabetes, and cancer--are related to electrical pollution.

Ulysses -

Testimonios: Stories of Latinx and Hispanic Mathematicians -

Pamela E. Harris 2021-08-16

Testimonios brings together first-person narratives from the vibrant, diverse, and complex Latinx and Hispanic mathematical community. Starting with childhood and family, the authors recount their own individual stories, highlighting their upbringing, education, and career paths. Their particular stories, told in their own voices, from their own perspectives, give visibility to some of the experiences of Latinx/Hispanic mathematicians. *Testimonios* seeks to inspire the next generation of Latinx and Hispanic mathematicians by featuring the stories of people like them, holding a mirror up to our own community. It also aims to provide a window for mathematicians (and aspiring mathematicians) from all ethnicities, with the hope of inspiring a better understanding of the diversity of the mathematical community.

Psychology - Rose M. Spielman 2018-08

The images in this textbook are in grayscale. There is a color version available - search for ISBN 9781680922370. *Psychology* is designed to meet scope and sequence requirements for the single-semester introduction to psychology course. The book offers a comprehensive treatment of core concepts, grounded in both classic studies and current and emerging research. The text also includes coverage of the DSM-5 in examinations of psychological disorders. *Psychology* incorporates discussions that reflect the diversity within the discipline, as well as the diversity of cultures and communities across the globe.

Heat Capacity and Thermal Expansion at Low Temperatures - T.H.K. Barron 2012-12-06

The birth of this monograph is partly due to the persistent efforts of the General Editor, Dr. Klaus Timmerhaus, to persuade the authors that they encapsulate their forty or fifty years of struggle with the thermal properties of materials into a book before they either expired or became totally senile. We recognize his wisdom in wanting a monograph which includes the closely linked properties of heat capacity and thermal expansion, to which we have added a little 'cement' in the form of elastic moduli. There seems to be a dearth of practitioners in these areas, particularly among physics postgraduate students, sometimes temporarily alleviated when a new generation of exciting materials are found, be they heavy fermion compounds, high temperature superconductors, or fullerenes. And yet the needs of the space industry, telecommunications, energy conservation, astronomy, medical imaging, etc. , place demands for more data and understanding of these properties for all classes of materials - metals, polymers, glasses, ceramics, and

mixtures thereof. There have been many useful books, including *Specific Heats at Low Temperatures* by E. S. Raja Gopal (1966) in this Plenum Cryogenic Monograph Series, but few if any that covered these related topics in one book in a fashion designed to help the cryogenic engineer and cryophysicist. We hope that the introductory chapter will widen the horizons of many without a solid state background but with a general interest in physics and materials.

Electr Circuits: Discr & Intgrtd, 3/E - Schilling 2002-10

Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation - 2012-03-02

Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation, Second Edition helps biomedical engineers understand the basic analog electronic circuits used for signal conditioning in biomedical instruments. It explains the function and design of signal conditioning systems using analog ICs--the circuits that enable ECG, EEG, *Electromagnetic Analysis and Design in Magnetic Resonance Imaging* - Jianming Jin 2018-02-06

This book presents a comprehensive treatment of electromagnetic analysis and design of three critical devices for an MRI system - the magnet, gradient coils, and radiofrequency (RF) coils. *Electromagnetic Analysis and Design in Magnetic Resonance Imaging* is unique in its detailed examination of the analysis and design of the hardware for an MRI system. It takes an engineering perspective to serve the many scientists and engineers in this rapidly expanding field. Chapters present: an introduction to MRI basic concepts of electromagnetics, including Helmholtz and Maxwell coils, inductance calculation, and magnetic fields produced by special cylindrical and spherical surface currents principles for the analysis and design of gradient coils, including discrete wires and the target field method analysis of RF coils based on the equivalent lumped-circuit model as well as an analysis based on the integral equation formulation survey of special purpose RF coils analytical and numerical methods for the analysis of electromagnetic fields in biological objects With the continued, active development of MRI instrumentation, *Electromagnetic Analysis and Design in Magnetic Resonance Imaging* presents an excellent, logically organized text - an indispensable resource for engineers, physicists, and graduate students working in the field of MRI.

Dynamic Project Management - Deborah S. Kezsbom 1989-05-10

This comprehensive, practical guide examines high-tech engineering projects and the people who implement them. It shows readers how to manage in today's competitive and demanding high-tech project environment and how to meet profit goals and motivate professionals. Based on actual experiences within some of the authors clients' organizations, the book addresses different types of projects, the difficulties in working within project organizations, the role of the project manager, the skills needed to survive in a multiproject environment, how to build the project team, dealing with conflict, how to respond to the request for a proposal, and how to evaluate and select computer-based project management information systems. Applications-oriented and eminently useful, the concepts and suggestions in this book can be successfully incorporated into the reader's own organization.

Keys to Play - Roger Moseley 2016-10-28

A free ebook version of this title is available through Luminos, University of California Press's Open Access publishing program for monographs. Visit www.luminosoa.org to learn more. How do keyboards make music playable? Drawing on theories of media, systems, and cultural techniques, *Keys to Play* spans Greek myth and contemporary Japanese digital games to chart a genealogy of musical play and its animation via improvisation, performance, and recreation. As a paradigmatic digital interface, the keyboard forms a field of play on which the book's diverse objects of inquiry--from clavichords to PCs and eighteenth-century musical dice games to the latest rhythm-action titles--enter into analogical relations. Remapping the keyboard's topography by way of Mozart and Super Mario, who head an expansive cast of historical and virtual actors, *Keys to Play* invites readers to unlock ludic dimensions of music that are at once old and new.

Language Variety in the South Revisited - Cynthia Bernstein 2014-01-22

Top linguists from diverse fields address language varieties in the South. *Language Variety in the South Revisited* is a comprehensive collection of new research on southern United States English by foremost scholars of regional language variation. Like its predecessor, *Language Variety in the South: Perspectives in Black and White* (The University of Alabama Press, 1986), this book includes current research into African American

vernacular English, but it greatly expands the scope of investigation and offers an extensive assessment of the field. The volume encompasses studies of contact involving African and European languages; analysis of discourse, pragmatic, lexical, phonological, and syntactic features; and evaluations of methods of collecting and examining data. The 38 essays not only offer a wealth of information about southern language varieties but also serve as models for regional linguistic investigation.

Microelectronics - Donald A. Neamen 2006-05-01

This junior level electronics text provides a foundation for analyzing and designing analog and digital electronics throughout the book. Extensive pedagogical features including numerous design examples, problem solving technique sections, Test Your Understanding questions, and chapter checkpoints lend to this classic text. The author, Don Neamen, has many years experience as an Engineering Educator. His experience shines through each chapter of the book, rich with realistic examples and practical rules of thumb. The Third Edition continues to offer the same hallmark features that made the previous editions such a success. Extensive Pedagogy: A short introduction at the beginning of each chapter links the new chapter to the material presented in previous chapters. The objectives of the chapter are then presented in the Preview section and then are listed in bullet form for easy reference. Test Your Understanding Exercise Problems with provided answers have all been updated. Design Applications are included at the end of chapters. A specific electronic design related to that chapter is presented. The various stages in the design of an electronic thermometer are explained throughout the text. Specific Design Problems and Examples are highlighted throughout as well.

The Book of the Duffs - Alistair Norwich Tayler 1914

Digital integrated electronics. Answer book - Herbert Taub
1978-02-01

Electronic Circuit Analysis - B. Visvesvara Rao 2012

The Founder's Dilemmas - Noam Wasserman 2013-04

The Founder's Dilemmas examines how early decisions by entrepreneurs can make or break a startup and its team. Drawing on a decade of research, including quantitative data on almost ten thousand founders as well as inside stories of founders like Evan Williams of Twitter and Tim Westergren of Pandora, Noam Wasserman reveals the common pitfalls founders face and how to avoid them.

A History of Modern Psychology in Context - Wade Pickren
2010-02-19

A fresh look at the history of psychology placed in its social, political, and cultural contexts A History of Modern Psychology in Context presents the history of modern psychology in the richness of its many contexts. The authors resist the traditional storylines of great achievements by eminent people, or schools of thought that rise and fall in the wake of scientific progress. Instead, psychology is portrayed as a network of scientific and professional practices embedded in specific temporal, social, political, and cultural contexts. The narrative is informed by three key concepts—indigenization, reflexivity, and social constructionism—and by the fascinating interplay between disciplinary Psychology and everyday psychology. The authors complicate the notion of who is at the center and who is at the periphery of the history of psychology by bringing in actors and events that are often overlooked in traditional accounts. They also highlight how the reflexive nature of Psychology—a science produced both by and about humans—accords history a prominent place in understanding the discipline and the theories it generates. Throughout the text, the authors show how Psychology and psychologists are embedded in cultures that indelibly shape how the discipline is defined and practiced, the kind of knowledge it creates, and how this knowledge is received. The text also moves beyond an exclusive focus on the development of North American and European psychologies to explore the development of psychologies in other indigenous contexts, especially from the mid-20th-century onward.

Electronics and Circuit Analysis Using MATLAB - John Okyere Attia
2018-10-08

The use of MATLAB is ubiquitous in the scientific and engineering communities today, and justifiably so. Simple programming, rich graphic facilities, built-in functions, and extensive toolboxes offer users the power and flexibility they need to solve the complex analytical problems inherent in modern technologies. The ability to use MATLAB effectively has become practically a prerequisite to success for engineering professionals. Like its best-selling predecessor, Electronics and Circuit

Analysis Using MATLAB, Second Edition helps build that proficiency. It provides an easy, practical introduction to MATLAB and clearly demonstrates its use in solving a wide range of electronics and circuit analysis problems. This edition reflects recent MATLAB enhancements, includes new material, and provides even more examples and exercises. New in the Second Edition: Thorough revisions to the first three chapters that incorporate additional MATLAB functions and bring the material up to date with recent changes to MATLAB A new chapter on electronic data analysis Many more exercises and solved examples New sections added to the chapters on two-port networks, Fourier analysis, and semiconductor physics MATLAB m-files available for download Whether you are a student or professional engineer or technician, Electronics and Circuit Analysis Using MATLAB, Second Edition will serve you well. It offers not only an outstanding introduction to MATLAB, but also forms a guide to using MATLAB for your specific purposes: to explore the characteristics of semiconductor devices and to design and analyze electrical and electronic circuits and systems.

Electronic Circuits, Discrete and Integrated - Donald L. Schilling 1979

Network Analysis & Synthesis - Uday A. Bakshi 2020-11-01

The importance of network analysis and synthesis is well known in the various engineering fields. The book provides comprehensive coverage of the signals and network analysis, network functions and two port networks, network synthesis and active filter design. The book is structured to cover the key aspects of the course Network Analysis & Synthesis. The book starts with explaining the various types of signals, basic concepts of network analysis and transient analysis using classical approach. The Laplace transform plays an important role in the network analysis. The chapter on Laplace transform includes properties of Laplace transform and its application in the network analysis. The book includes the discussion of network functions of one and two port networks. The book covers the various aspects of two port network parameters along with the conditions of symmetry and reciprocity. It also derives the interrelationships between the two port network parameters. The network synthesis starts with the realizability theory including Hurwitz polynomial, properties of positive real functions, Sturm's theorem and maximum modulus theorem. The book covers the various aspects of one port network synthesis explaining the network synthesis of LC, RC, RL and RLC networks using Foster and Cauer forms. Then it explains the elements of transfer function synthesis. Finally, the book illustrates the active filter design. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

Nutrition and Enhanced Sports Performance - Debasis Bagchi
2013-07-26

Nutrition and Enhanced Sports Performance: Muscle Building, Endurance, and Strength provides a comprehensive overview to understanding the integrated impact of nutrition on performance. The book is divided into five main themes: An introductory overview of the role of nutrition in human health Various types of physical exercises, including cardiovascular training, resistance training, aerobic and anaerobic exercise, bioenergetics, and energy balance. This section also covers the nutritional requirements associated with various fitness programs, as well as exercise and nutritional requirements in special populations, including the pre-pubertal, young, elderly, and disabled. Sports and nutritional requirements. The molecular mechanisms involved in muscle building A thorough review of various food, minerals, supplements, phytochemicals, amino acids, transition metals, small molecules and other ergogenic agents that have been implicated in muscle building and human performance This book is an ideal resource for nutritionists, dietitians, exercise physiologists, health practitioners, researchers, students, athletes, trainers, and all those who wish to broaden their knowledge of nutrition and its role in human performance. Discusses the impact of nutrition, including food, minerals, vitamins, hormones, trace elements, etc., that can significantly attenuate/improve human performance and sports Addresses the molecular and cellular pathways involved in the physiology of muscle growth and the mechanisms by which nutrients affect muscle health, growth and maintenance Encompasses multiple forms of sports/performance and the salient contribution of appropriate nutrition on special populations,

including nutritional guidelines and recommendations to athletes Strong focus on muscle building

The Circuits and Filters Handbook, Third Edition (Five Volume Slipcase Set) - Wai-Kai Chen 2009-06-25

Standard-setting, groundbreaking, authoritative, comprehensive—these often overused words perfectly describe *The Circuits and Filters Handbook, Third Edition*. This standard-setting resource has documented the momentous changes that have occurred in the field of electrical engineering, providing the most comprehensive coverage available. More than 150 contributing experts offer in-depth insights and enlightened perspectives into standard practices and effective techniques that will make this set the first—and most likely the only—tool you select to help

you with problem solving. In its third edition, this groundbreaking bestseller surveys accomplishments in the field, providing researchers and designers with the comprehensive detail they need to optimize research and design. All five volumes include valuable information on the emerging fields of circuits and filters, both analog and digital. Coverage includes key mathematical formulas, concepts, definitions, and derivatives that must be mastered to perform cutting-edge research and design. The handbook avoids extensively detailed theory and instead concentrates on professional applications, with numerous examples provided throughout. The set includes more than 2500 illustrations and hundreds of references. Available as a comprehensive five-volume set, each of the subject-specific volumes can also be purchased separately.