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### KEY=DESIGN - GUNNER PORTER

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**Wind Energy Explained Theory, Design and Application** *Wiley-Blackwell* This textbook is intended to provide an introduction to the cross-disciplinary field of wind engineering. It includes end-of-chapter tutorial sections (solutions manual available) and combines both academic and industrial experience. **Wind Energy Explained Theory, Design and Application** *John Wiley & Sons* Wind energy's bestselling textbook- fully revised. This must-have second edition includes up-to-date data, diagrams, illustrations and thorough new material on: the fundamentals of wind turbine aerodynamics; wind turbine testing and modelling; wind turbine design standards; offshore wind energy; special purpose applications, such as energy storage and fuel production. Fifty additional homework problems and a new appendix on data processing make this comprehensive edition perfect for engineering students. This book offers a complete examination of one of the most promising sources of renewable energy and is a great introduction to this cross-disciplinary field for practising engineers. "provides a wealth of information and is an excellent reference book for people interested in the subject of wind energy." (IEEE Power & Energy Magazine, November/December 2003) "deserves a place in the library of every university and college where renewable energy is taught." (The International Journal of Electrical Engineering Education, Vol.41, No.2 April 2004) "a very comprehensive and well-organized treatment of the current status of wind power." (Choice, Vol. 40, No. 4, December 2002) **The Vacuum Interrupter Theory, Design, and Application** *CRC Press* Title: The Vacuum Interrupter: Theory, Design, and Application Shelving guide: Electrical Engineering Dr. Paul Slade draws from his nearly six decades of active experience to develop this second edition of The Vacuum Interrupter: Theory, Design, and Application. This book begins by discussing the design requirements for high voltage vacuum interrupters and then the contact requirements to interrupt the vacuum arc. It then continues by describing the various applications in which the vacuum interrupter is generally utilized. Part 1 of this book begins with a detailed review of the vacuum breakdown process. It continues by covering the steps necessary for the design and the manufacture of a successful vacuum interrupter. The vacuum arc is then discussed, including how it is affected as a function of current. An overview of the development and use of practical contact materials, along with their advantages and disadvantages, follows. Contact designs that are introduced to control the high current vacuum arc are also analyzed. Part 2, on application, begins with a discussion of the arc interruption process for low current and high current vacuum arcs. It examines the voltage escalation phenomenon that can occur when interrupting inductive circuits. The occurrence of contact welding for closed contacts subjected to the passage of high currents, and for contacts when closing on high currents, is explored. The general requirements for the successful manufacture and testing of vacuum circuit breakers is then presented. The general application of vacuum interrupters to switch load currents, especially when applied to capacitor circuits, is also given. The interruption of high short circuit currents is presented along with the expected performance of the two major contact designs. Owing to the ever-increasing need for environmentally friendly circuit protection devices, the development and application of the vacuum interrupter will only increase in the future. At present the vacuum circuit breaker is the technology of choice for distribution circuits (5kV to 40.5kV). It is increasingly being applied to transmission circuits (72.5kV to 242kV). In the future, its application for protecting high voltage DC networks is assured. Audience This is a practical source book for engineers and scientists interested in studying the development and application of the vacuum interrupter Research scientists in industry and universities Graduate students beginning their study of vacuum interrupter phenomena Design engineers applying vacuum interrupters in vacuum switches, vacuum contactors, vacuum circuit breakers, and vacuum contactors It provides a unique and comprehensive review of all aspects of vacuum interrupter technology for those new to the subject and for those who wish to obtain a deeper understanding of its science and application Scientists and engineers, who are beginning their research into vacuum breakdown and aspects of the vacuum arc, will find the extensive bibliography and phenomenological descriptions to be a useful introduction **Acoustic Absorbers and Diffusers Theory, Design and Application** *CRC Press* Absorbers and diffusers are two of the main design tools for altering the acoustic conditions of rooms, semi-enclosed spaces and the outdoor environment. Their correct use is important for delivering high quality acoustics. Unique and authoritative, this book describes how to effectively measure, model, design and apply diffusers and absorbers. It is a resource for new and experienced acousticians, seeking an understanding of the evolution, characteristics and application of modern diffusers. Absorption is a more established technology and so the book blends traditional designs with modern developments. The book covers practical and theoretical aspects of absorbers and diffusers and is well illustrated with examples of installations and case studies. This new edition brings Acoustic Absorbers and Diffusers up-to-date with current research, practice and standards. New developments in measurement, materials, theory and practice since the first edition (published in 2004) are included. The sections on absorbers are extended to include more about noise control. **Theory, Design, and Applications of Unmanned Aerial Vehicles** *CRC Press* This book provides a complete overview of the theory, design, and applications of unmanned aerial vehicles. It covers the basics, including definitions, attributes, manned vs. unmanned,

design considerations, life cycle costs, architecture, components, air vehicle, payload, communications, data link, and ground control stations. Chapters cover types and civilian roles, sensors and characteristics, alternative power, communications and data links, conceptual design, human machine interface, sense and avoid systems, civil airspace issues and integration efforts, navigation, autonomous control, swarming, and future capabilities. **Air Bearings Theory, Design and Applications** *John Wiley & Sons* Comprehensive treatise on gas bearing theory, design and application This book treats the fundamental aspects of gas bearings of different configurations (thrust, radial, circular, conical) and operating principles (externally pressurized, self-acting, hybrid, squeeze), guiding the reader throughout the design process from theoretical modelling, design parameters, numerical formulation, through experimental characterisation and practical design and fabrication. The book devotes a substantial part to the dynamic stability issues (pneumatic hammering, sub-synchronous whirling, active dynamic compensation and control), treating them comprehensively from theoretical and experimental points of view. Key features: Systematic and thorough treatment of the topic. Summarizes relevant previous knowledge with extensive references. Includes numerical modelling and solutions useful for practical application. Thorough treatment of the gas-film dynamics problem including active control. Discusses high-speed bearings and applications. **Air Bearings: Theory, Design and Applications** is a useful reference for academics, researchers, instructors, and design engineers. The contents will help readers to formulate a gas-bearing problem correctly, set up the basic equations, solve them establishing the static and dynamic characteristics, utilise these to examine the scope of the design space of a given problem, and evaluate practical issues, be they in design, construction or testing. **Ball and Roller Bearings Theory, Design and Application** *John Wiley & Sons* This book is the third edition of the standard work for all engineers concerned with rolling bearings - in design and development; in production and operation; in maintenance and repair; in purchasing and materials management. Fully revised, features new to this edition include: \* coverage of the new 'adjusted life' calculation, which takes into account the endurance strength of rolling bearings in relation to factors such as the cleanliness of the lubricant and the design of the bearing housing using the flow of force \* expanded chapter on lubrication The information in this book will help bearing engineers make real-life improvements to the capacity and operational reliability of bearings in vehicles, machines, equipment and plants, saving on both time and costs. This book is an essential reference to the fundamental correlations of bearing engineering, and to all aspects of bearing design and technology. **Metamaterials Theory, Design, and Applications** *Springer Science & Business Media* **Metamaterials: Theory, Design, and Applications** goes beyond left-handed materials (LHM) or negative index materials (NIM) and focuses on recent research activity. Included here is an introduction to optical transformation theory, revealing invisible cloaks, EM concentrators, beam splitters, and new-type antennas, a presentation of general theory on artificial metamaterials composed of periodic structures, coverage of a new rapid design method for inhomogeneous metamaterials, which makes it easier to design a cloak, and new developments including but not limited to experimental verification of invisible cloaks, FDTD simulations of invisible cloaks, the microwave and RF applications of metamaterials, sub-wavelength imaging using anisotropic metamaterials, dynamical metamaterial systems, photonic metamaterials, and magnetic plasmon effects of metamaterials. **Phase-Locked Loops** *McGraw Hill Professional* **Phase Locked Loops (PLLs)** are electronic circuits used for frequency control. Anything using radio waves, from simple radios and cell phones to sophisticated military communications gear uses PLLs. The communications industry's big move into wireless in the past two years has made this mature topic red hot again. The fifth edition of this classic circuit reference comes complete with extremely valuable PLL design software written by Dr. Best. The software alone is worth many times the price of the book. The new edition also includes new chapters on frequency synthesis, CAD for PLLs, mixed-signal PLLs, and a completely new collection of sample communications applications. **Heat Pipes Theory, Design and Applications** *Butterworth-Heinemann* **Heat Pipes, 6th Edition**, takes a highly practical approach to the design and selection of heat pipes, making it an essential guide for practicing engineers and an ideal text for postgraduate students. This new edition has been revised to include new information on the underlying theory of heat pipes and heat transfer, and features fully updated applications, new data sections, and updated chapters on design and electronics cooling. The book is a useful reference for those with experience and an accessible introduction for those approaching the topic for the first time. Contains all information required to design and manufacture a heat pipe Suitable for use as a professional reference and graduate text Revised with greater coverage of key electronic cooling applications **Magnetic Bearings Theory, Design, and Application to Rotating Machinery** *Springer Science & Business Media* Compiling the expertise of nine pioneers of the field, **Magnetic Bearings - Theory, Design, and Application to Rotating Machinery** offers an encyclopedic study of this rapidly emerging field with a balanced blend of commercial and academic perspectives. Every element of the technology is examined in detail, beginning at the component level and proceeding through a thorough exposition of the design and performance of these systems. The book is organized in a logical fashion, starting with an overview of the technology and a survey of the range of applications. A background chapter then explains the central concepts of active magnetic bearings while avoiding a morass of technical details. From here, the reader continues to a meticulous, state-of-the-art exposition of the component technologies and the manner in which they are assembled to form the AMB/rotor system. These system models and performance objectives are then tied together through extensive discussions of control methods for both rigid and flexible rotors, including consideration of the problem of system dynamics identification. Supporting this, the issues of system reliability and fault management are discussed from several useful and complementary perspectives. At the end of the book, numerous special concepts and systems, including micro-scale bearings, self-bearing motors, and self-sensing bearings, are put forth as promising directions for new research and development. Newcomers to the field will find the material highly accessible while veteran practitioners will be impressed by the level of technical detail that emerges from a combination of sophisticated analysis and insights gleaned from many collective years of practical experience. An exhaustive, self-contained text on active magnetic bearing technology, this book should be a core reference for anyone seeking to understand or develop systems using

magnetic bearings. **Color Theory and Its Application in Art and Design** *Springer* This book directly addresses a long-felt, unsatisfied need of modern color science - an appreciative and technically sound presentation of the principles and main offerings of colorimetry to artists and designers, written by one of them. With his unique blend of training and experience in engineering, with his lifelong interest and, latterly, career in art and art education, Dr. Agoston is unusually well prepared to convey the message of color science to art and design. His book fulfills the hopes I had when I first heard about him and his book. I foresee important and long-lasting impacts of this book, analogous to those of the epoch-making writings by earlier artist-scientists, such as Leonardo, Chevreul, Munsell, and Pope. Nearly all persons who have contributed to color science, recently as well as formerly, were attracted to the study of color by color in art. Use of objective or scientific methods did not result from any cold, detached attitude, but from the inherent difficulties of the problems concerning color and its use, by which they were intrigued. Modern education and experience has taught many people how to tackle difficult problems by use of scientific methods. Therefore - color science. **Heat Pipes** *Elsevier* A comprehensive, up-to-date coverage of the theory, design and manufacture of heat pipes and their applications. This latest edition has been thoroughly revised, up-dated and expanded to give an in-depth coverage of the new developments in the field. Significant new material has been added to all the chapters and the applications section has been totally rewritten to ensure that topical and important applications are appropriately emphasised. The bibliography has been considerably enlarged to incorporate much valuable new information. Thus readers of the previous edition, which has established itself as the standard text on the subject, will find much additional data of interest whilst new readers will find the vast amount of useful data included in the appendices an indispensable source of reference. **Transformers and Inductors for Power Electronics Theory, Design and Applications** *John Wiley & Sons* Based on the fundamentals of electromagnetics, this clear and concise text explains basic and applied principles of transformer and inductor design for power electronic applications. It details both the theory and practice of inductors and transformers employed to filter currents, store electromagnetic energy, provide physical isolation between circuits, and perform stepping up and down of DC and AC voltages. The authors present a broad range of applications from modern power conversion systems. They provide rigorous design guidelines based on a robust methodology for inductor and transformer design. They offer real design examples, informed by proven and working field examples. Key features include: emphasis on high frequency design, including optimisation of the winding layout and treatment of non-sinusoidal waveforms a chapter on planar magnetic with analytical models and descriptions of the processing technologies analysis of the role of variable inductors, and their applications for power factor correction and solar power unique coverage on the measurements of inductance and transformer capacitance, as well as tests for core losses at high frequency worked examples in MATLAB, end-of-chapter problems, and an accompanying website containing solutions, a full set of instructors' presentations, and copies of all the figures. Covering the basics of the magnetic components of power electronic converters, this book is a comprehensive reference for students and professional engineers dealing with specialised inductor and transformer design. It is especially useful for senior undergraduate and graduate students in electrical engineering and electrical energy systems, and engineers working with power supplies and energy conversion systems who want to update their knowledge on a field that has progressed considerably in recent years. **Reflectarray Antennas Theory, Designs, and Applications** *John Wiley & Sons* Introduction to reflectarray antennas -- Analysis and design of reflectarray elements -- System design and aperture efficiency analysis -- Radiation analysis techniques -- Bandwidth of reflectarray antennas -- Reflectarray design examples -- Broadband and multi-band reflectarray antennas -- Terahertz, infrared, and optical reflectarray antennas -- Multi-beam and shaped-beam reflectarray antennas -- Beam-scanning reflectarray antennas -- Reflectarray engineering and emerging applications **VLSI Reference Circuits - Theory, Design, and Applications** *Lulu.com* **Intelligent Robotic Systems: Theory, Design and Applications** *Springer Science & Business Media* Since the late 1960s, there has been a revolution in robots and industrial automation, from the design of robots with no computing or sensory capabilities (first-generation), to the design of robots with limited computational power and feedback capabilities (second-generation), and the design of intelligent robots (third-generation), which possess diverse sensing and decision making capabilities. The development of the theory of intelligent machines has been developed in parallel to the advances in robot design. This theory is the natural outcome of research and development in classical control (1950s), adaptive and learning control (1960s), self-organizing control (1970s) and intelligent control systems (1980s). The theory of intelligent machines involves utilization and integration of concepts and ideas from the diverse disciplines of science, engineering and mathematics, and fields like artificial intelligence, system theory and operations research. The main focus and motivation is to bridge the gap between diverse disciplines involved and bring under a common cover several generic methodologies pertaining to what has been defined as machine intelligence. Intelligent robotic systems are a specific application of intelligent machines. They are complex computer controlled robotic systems equipped with a diverse set of visual and non visual sensors and possess decision making and problem solving capabilities within their domain of operation. Their modeling and control is accomplished via analytical and heuristic methodologies and techniques pertaining to generalized system theory and artificial intelligence. **Intelligent Robotic Systems: Theory, Design and Applications**, presents and justifies the fundamental concepts and ideas associated with the modeling and analysis of intelligent robotic systems. Appropriate for researchers and engineers in the general area of robotics and automation, **Intelligent Robotic Systems** is both a solid reference as well as a text for a graduate level course in intelligent robotics/machines. **Centrifugal and Axial Flow Pumps Theory, Design, and Application Innovative Conceptual Design Theory and Application of Parameter Analysis** *Cambridge University Press* This 2001 book covers theory and applications of conceptual design, the initial stage of engineering design. **Electrical Solitons Theory, Design, and Applications** *CRC Press* The dominant medium for soliton propagation in electronics, nonlinear transmission line (NLTL) has found wide application as a testbed for nonlinear dynamics and KdV phenomena as well as for practical applications in ultra-sharp pulse/edge generation and novel nonlinear communication schemes in electronics. While

many texts exist covering solitons in general, there is as yet no source that provides a comprehensive treatment of the soliton in the electrical domain. Drawing on the award winning research of Carnegie Mellon's David S. Ricketts, *Electrical Solitons Theory, Design, and Applications* is the first text to focus specifically on KdV solitons in the nonlinear transmission line. Divided into three parts, the book begins with the foundational theory for KdV solitons, presents the core underlying mathematics of solitons, and describes the solution to the KdV equation and the basic properties of that solution, including collision behaviors and amplitude-dependent velocity. It also examines the conservation laws of the KdV for loss-less and lossy systems. The second part describes the KdV soliton in the context of the NLTL. It derives the lattice equation for solitons on the NLTL and shows the connection with the KdV equation as well as the governing equations for a lossy NLTL. Detailing the transformation between KdV theory and what we measure on the oscilloscope, the book demonstrates many of the key properties of solitons, including the inverse scattering method and soliton damping. The final part highlights practical applications such as sharp pulse formation and edge sharpening for high speed metrology as well as high frequency generation via NLTL harmonics. It describes challenges to realizing a robust soliton oscillator and the stability mechanisms necessary, and introduces three prototypes of the circular soliton oscillator using discrete and integrated platforms.

*Design-Based Research in Education Theory and Applications* Guilford Publications "Effective research in educational settings requires collaboration between researchers and school-based practitioners to codesign instruction and assessment, analyze findings, and make thoughtful revisions. This innovative work presents design-based research (DBR), a key methodology for conducting studies in authentic educational contexts. Leading experts provide examples of high-quality DBR addressing different research foci, grade levels, and subject areas. Applications are described for curriculum development, intervention, assessment, digital contexts, and teaching second-language learners. Also addressed is DBR's role in educator preparation, professional development, and other settings"--

*Electrical and Electronic Engineering: Theory, Design and Applications* Willford Press Electrical engineering studies electricity and electromagnetism for creating devices to regulate and control electric current and electronic engineering is concerned with the creation of circuits that can contain and transmit electricity. This book on electrical and electronic engineering elucidates new techniques and applications in a multidisciplinary approach. The objective of this book is to give a general view of the different areas of these allied fields, and their applications. It presents the complex subject of electrical and electronic engineering in the most comprehensible and easy to understand language. This book, with its detailed analyses and data, will prove immensely beneficial to professionals and students involved in this area.

*The Theory, Design and Application of a New Type of Long-period Horizontal Seismograph Mechanical Design Theory and Applications* Butterworth-Heinemann *Mechanical Design: Theory and Applications, Third Edition* introduces the design and selection of common mechanical engineering components and machine elements, hence providing the foundational "building blocks" engineers need to practice their art. In this book, readers will learn how to develop detailed mechanical design skills in the areas of bearings, shafts, gears, seals, belt and chain drives, clutches and brakes, and springs and fasteners. Where standard components are available from manufacturers, the steps necessary for their specification and selection are thoroughly developed. Descriptive and illustrative information is used to introduce principles, individual components, and the detailed methods and calculations that are necessary to specify and design or select a component. As well as thorough descriptions of methodologies, this book also provides a wealth of valuable reference information on codes and regulations. Presents new material on key topics, including actuators for robotics, alternative design methodologies, and practical engineering tolerancing Clearly explains best practice for design decision-making Provides end-of-chapter case studies that tie theory and methods together Includes up-to-date references on all standards relevant to mechanical design, including ASNI, ASME, BSI, AGMA, DIN and ISO Direct Digital Synthesizers *Theory, Design and Applications* Springer Science & Business Media A major advantage of a direct digital synthesizer is that its output frequency, phase and amplitude can be precisely and rapidly manipulated under digital processor control. This book was written to find possible applications for radio communication systems.

*The Russian Theory of Activity Current Applications To Design and Learning* Psychology Press The opening of the former Soviet Union to the West has provided an opportunity to describe Russian human factors/ergonomics and to compare American theories and methods with it. Although this book is principally dedicated to describing the theory of activity as it applies to issues of design and training, it is also offered to a general audience of psychologists and interested lay readers. This theory studies the goal-directed behavior of man and attempts to integrate the cognitive, motivational, and behavioral aspects of activity into a holistic system. Such fundamental notions as goal, action, and self-regulation are described and analyzed from totally different theoretical points of view. This is the first comprehensive, systematic description of the theory of activity in the English language. Existing attempts to translate the theory of activity into English suffer from certain limitations. Among them, the theory of activity -- considered one of the more important accomplishments of Soviet psychological science -- has an extensive history dating back to the work of Vygotsky and his students. Subsequent development of the theory by other well-known Soviet psychologists and psychophysicologists took place within different schools with some significant differences. In the former Soviet Union, psychological theory could not be advanced unconnected to Marxist-Leninist ideology. Accordingly, theoretical formulations were subject to their own version of "political correctness." Books published in this field were addressed only to other scientists with backgrounds in the field. Moreover, the translation of the technical terms in Russian psychology frequently resist translation in the absence of the context of the debates in which they were being used. Thus, simple translation of books in this field as they were written in a specialized and politicized environment for Russian audiences is really not a particularly sensible or worthwhile undertaking. This book is addressed in the first instance to Western psychologists. It compares, among other things, analyses of work from the former Soviet Union with the work from the West. Applications of activity theory to design and learning were paramount in the Soviet Union. Using their own theoretical perspective, the authors provide a comparative analysis of the various schools

working in activity theory. They hope that this book may facilitate the exchange of ideas between Russian psychological scientists and Western psychologists working in ergonomics, human factors, industrial/organizational psychology, education, learning, and related areas where the theory of activity may find general application. This book's authors attempt to provide a contribution not only to science but also to history. Western researchers have strongly influenced Russian work, but because of negative political pressure in the former USSR, the flow of concepts was one-sided. Russian ergonomists received so much from American and Western sources that it is now important to give something back. Despite the considerable similarity between Russian and American theories and methods, the special "spin" the former put on their work may stimulate new thinking on the part of their American colleagues.

**Acoustic Wave Sensors Theory, Design and Physico-Chemical Applications** *Elsevier* Written by an interdisciplinary group of experts from both industry and academia, *Acoustic Wave Sensors* provides an in-depth look at the current state of acoustic wave devices and the scope of their use in chemical, biochemical, and physical measurements, as well as in engineering applications. Because of the inherent interdisciplinary applications of these devices, this book will be useful for the chemist and biochemist interested in the use and development of these sensors for specific applications; the electrical engineer involved in the design and improvement of these devices; the chemical engineer and the biotechnologist interested in using these devices for process monitoring and control; and the sensor community at large. Provides in-depth comparison and analyses of different types of acoustic wave devices Discusses operating principles and design considerations Includes table of relevant material constants for quick reference Presents an extensive review of current uses of these devices for chemical, biochemical, and physical measurements, and engineering applications

**Theory, Design and Application of One- and Two-dimensional Complex PCAS Filters** *Game Theory Applications in Network Design* *IGI Global* The use of game theoretic techniques is playing an increasingly important role in the network design domain. Understanding the background, concepts, and principles in using game theory approaches is necessary for engineers in network design. *Game Theory Applications in Network Design* provides the basic idea of game theory and the fundamental understanding of game theoretic interactions among network entities. The material in this book also covers recent advances and open issues, offering game theoretic solutions for specific network design issues. This publication will benefit students, educators, research strategists, scientists, researchers, and engineers in the field of network design.

**HCI Outdoors: Theory, Design, Methods and Applications** *Springer Nature* Advances in network connectivity, power consumption, and physical size create new possibilities for using interactive computing outdoors. However, moving computing outdoors can drastically change the human outdoor experience. This impact is felt in many kinds of outdoor activities such as citizen science, personal recreation, search and rescue, informal education, and others. It is also felt across outdoor settings that range from remote wilderness to crowded cities. Understanding these effects can lead to ideas, designs and systems that improve, rather than diminish, outdoor experiences. This book represents the current results emerging from recent workshops focused on HCI outdoors and held in conjunction with CHI, GROUP, UbiComp, and MobileHCI conferences. Based on feedback at those workshops, and outreach to other leaders in the field, the chapters collected were crafted to highlight methods and approaches for understanding how technologies such as handhelds, wearables, and installed standalone devices impact individuals, groups, and even communities. These findings frame new ways of thinking about HCI outdoors, explore logistical issues associated with moving computing outdoors, and probe new experiences created by involving computing in outdoor pursuits. Also important are the ways that social media has influenced preparation, experience, and reflection related to outdoor experiences. *HCI Outdoors: Theory, Design, Methods and Applications* is of interest to HCI researchers, HCI practitioners, and outdoor enthusiasts who want to shape future understanding and current practice related to technology in every kind of outdoor experience.

**Interactive Design An Introduction to the Theory and Application of User-centered Design** *Rockport Pub* User experience design is one of the fastest-growing specialties in graphic design. Smart companies realize that the most successful products are designed to meet the needs and goals of real people—the users. This means putting the user at the center of the design process. This innovative, comprehensive book examines the user-centered design process from the perspective of a designer. With rich imagery, *Interactive Design* introduces the different UX players, outlines the user-centered design process from user research to user testing, and explains through various examples how user-centered design has been successfully integrated into the design process of a variety of design studios worldwide.

**Theory and Application of Uniform Experimental Designs** *Springer* The book provides necessary knowledge for readers interested in developing the theory of uniform experimental design. It discusses measures of uniformity, various construction methods of uniform designs, modeling techniques, design and modeling for experiments with mixtures, and the usefulness of the uniformity in block, factorial and supersaturated designs. Experimental design is an important branch of statistics with a long history, and is extremely useful in multi-factor experiments. Involving rich methodologies and various designs, it has played a key role in industry, technology, sciences and various other fields. A design that chooses experimental points uniformly scattered on the domain is known as uniform experimental design, and uniform experimental design can be regarded as a fractional factorial design with model uncertainty, a space-filling design for computer experiments, a robust design against the model specification, and a supersaturated design and can be applied to experiments with mixtures.

**Game Theory with Engineering Applications** *SIAM* Engineering systems are highly distributed collective systems that have humans in the loop. Engineering systems emphasize the potential of control and games beyond traditional applications. Game theory can be used to design incentives to obtain socially desirable behaviors on the part of the players, for example, a change in the consumption patterns on the part of the "prosumers" (producers-consumers) or better redistribution of traffic. This unique book addresses the foundations of game theory, with an emphasis on the physical intuition behind the concepts, an analysis of design techniques, and a discussion of new trends in the study of cooperation and competition in large complex distributed systems.

**Ball and roller bearings theory, design and application** *Antenna Theory and Applications* *John Wiley & Sons* This comprehensive text on antenna theory explains the

origin of radiation and discusses antenna parameters in-depth This book offers an in-depth coverage of fundamental antenna theory, and shows how to apply this in practice. The author discusses electromagnetic radiation and antenna characteristics such as impedance, radiation pattern, polarization, gain and efficiency. In addition, the book provides readers with the necessary tools for analyzing complex antennas and for designing new ones. Furthermore, a refresher chapter on vector algebra, including gradient, divergence and curl operation is included. Throughout the book ample examples of employing the derived theory are given and all chapters are concluded with problems, giving the reader the opportunity to test his/her acquired knowledge. Key Features: Covers the mathematical and physical background that is needed to understand electromagnetic radiation and antennas Discusses the origin of radiation and provides an in-depth explanation of antenna parameters Explores all the necessary steps in antenna analysis allowing the reader to understand and analyze new antenna structures Contains a chapter on vector algebra, which is often a stumbling block for learners in this field Includes examples and a list of problems at the end of each chapter Accompanied by a website containing solutions to the problems (for instructors) and CST modeling files

([www.wiley.com/go/visser\\_antennas](http://www.wiley.com/go/visser_antennas) This book will serve as an invaluable reference for advanced (last year Bsc, Msc) students in antenna and RF engineering, wireless communications, electrical engineering, radio engineers and other professionals needing a reference on antenna theory. It will also be of interest to advanced/senior radio engineers, designers and developers. Landscape Design Theory and Application *Delmar Pub* Landscape Design: Theory and Application was written from a blended perspective of a horticulturist and landscape architect who together have over 25 years of university teaching experience in landscape design. This text discusses design tools used by landscape design professionals and then describes how to use these tools to graphically represent a landscape design concept. It introduces the topic of design as a process and how human preferences impact landscape design components. Students will learn the basic elements of art and how these elements are applied to aesthetic landscape design principles. They will also learn to understand how functional design principles need to be considered in concert with the aesthetic principles, and how landscape preference influences the application of the aesthetic principles. The process of landscape design is discussed in detail including: strategies for interacting with the client, selling a landscape concept, and creating a design from start (concept development) to finish (final plan). With the foundation for design principles and design process in place, this text provides detailed descriptions of plant material and hardscape material selections, respectively. Lastly, strategies for pricing the landscape, examples of landscape business models, and highlights a successful landscape design/build company are covered in order to provide concrete examples of how and why they have been successful. Handbook of Research on Developing Engaging Online Courses *IGI Global* Online instruction is rapidly expanding the way professors think about and plan instruction. In addition, online instructional practices are expanding and changing as new tools and strategies are adopted. It is imperative that programs and institutions of higher education explore increased online options that align with best practices to develop effective and engaging online courses. The Handbook of Research on Developing Engaging Online Courses is an essential research publication that provides multiple perspectives on improving student engagement and success in online courses. This book includes topics focused on the online learner, online course content, and effective online instruction. The content contained within the title is ideal for curriculum developers, instructional designers, IT consultants, deans, chairs, teachers, administrators, academicians, researchers, and students. Atomic Absorption Spectrometry Theory, Design and Applications *Elsevier Science Serials* Hank Willis Thomas gained wide recognition with his highly provocative series B(r)ANDED, which addresses the commodification of African-American male identity by raising questions about visual culture and the power of logos. Pitch Blackness, his first monograph, includes selections from this series and several others. The book begins with a deeply personal and interpretive re-telling of the senseless murder of young Songha Willis, the artist's cousin, who was robbed at gunpoint and murdered outside a nightclub in Philadelphia in 2000. It then charts Hank Willis Thomas' career as he grapples with the issues of grief, black-on-black violence in America and the ways in which corporate culture is complicit in the crises of black male identity. The concluding section presents his newest body of work, Unbranded--in which he examines advertising and media representation of African-Americans. With his characteristic pointedness and dark humor, Willis Thomas shows in Pitch Blackness why he is considered one of today's most compelling emerging artists. Essays by Rene de Guzman and Robin D. G. Kelley. Hank Willis Thomas, born in Plainfield, New Jersey in 1976, received his BFA from New York University's Tisch School of the Arts and his MFA in Photography, along with an MA in Visual Criticism from the California College of the Arts, San Francisco. He has exhibited in galleries and museums, including the Studio Museum in Harlem; Wadsworth Atheneum, Hartford; Leica Gallery, New York; and the National Portrait Gallery, Washington, D.C. Willis Thomas is the first recipient of the Aperture West Book Prize, a new annual prize awarded by Aperture Foundation. He lives in Oakland, California. Optimization Methods From Theory to Design Scientific and Technological Aspects in Mechanics *Springer Science & Business Media* This book is about optimization techniques and is subdivided into two parts. In the first part a wide overview on optimization theory is presented. Optimization is presented as being composed of five topics, namely: design of experiment, response surface modeling, deterministic optimization, stochastic optimization, and robust engineering design. Each chapter, after presenting the main techniques for each part, draws application oriented conclusions including didactic examples. In the second part some applications are presented to guide the reader through the process of setting up a few optimization exercises, analyzing critically the choices which are made step by step, and showing how the different topics that constitute the optimization theory can be used jointly in an optimization process. The applications which are presented are mainly in the field of thermodynamics and fluid dynamics due to the author's background. Distillation Theory and its Application to Optimal Design of Separation Units *Cambridge University Press* Originally published in 2004, Distillation Theory and Its Application to Optimal Design of Separation Units presents a clear, multidimensional geometric representation of distillation theory that is valid for all distillation column types, splits, and mixtures. This representation answers such fundamental questions as: what are

**the feasible separation products for a given mixture? What minimum power is required to separate a given mixture? What minimum number of trays is necessary to separate a given mixture at a fixed power input? This book is intended for students and specialists in the design and operation of separation units in the chemical, pharmaceutical, food, wood, petrochemical, oil-refining, and natural gas industries and for software designers.**