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KEY=PHOTOELECTRIC - MARCO JOEL

MOBILE SENSORS AND CONTEXT-AWARE COMPUTING

Morgan Kaufmann **Mobile Sensors and Context-Aware Computing** is a useful guide that explains how hardware, software, sensors, and operating systems converge to create a new generation of context-aware mobile applications. This cohesive guide to the mobile computing landscape demonstrates innovative mobile and sensor solutions for platforms that deliver enhanced, personalized user experiences, with examples including the fast-growing domains of mobile health and vehicular networking. Users will learn how the convergence of mobile and sensors facilitates cyber-physical systems and the Internet of Things, and how applications which directly interact with the physical world are becoming more and more compatible. The authors cover both the platform components and key issues of security, privacy, power management, and wireless interaction with other systems. Shows how sensor validation, calibration, and integration impact application design and power management Explains specific implementations for pervasive and context-aware computing, such as navigation and timing Demonstrates how mobile applications can satisfy usability concerns, such as know me, free me, link me, and express me Covers a broad range of application areas, including ad-hoc networking, gaming, and photography

PHOTOELECTRIC SENSORS AND CONTROLS

SELECTION AND APPLICATION, FIRST EDITION

CRC Press This excellent reference assembles into one source all pertinent information for matching sensors and controls with specific applications -- helping solve even the most difficult optical sensing and control problems. Requiring only minimal experience in enclosures, optics, electronics, and industrial controls, **Photoelectric Sensors and Controls** explains fundamental concepts in easy-to-understand terms, backed with helpful diagrams ... gives in-depth analysis of major sensor configurations ... describes electrical control interfaces, control logic functions, and specifications ... provides definitions of technical terms in clear and concise language ... discusses the value of product test standards ... covers the effect of environmental issues on system reliability ... and contains more than 70 application examples that clarify the possibilities, limitations, and pitfalls of photoelectric sensors and controls. Richly illustrated with over 300 drawings, photographs, graphs, and tables, this resource is invaluable reading for engineers, designers, and manufacturers involved with sensor applications; professional seminars; and technical school and undergraduate courses in optical sensing and control. Book jacket.

INDUSTRIAL CONTROL TECHNOLOGY

A HANDBOOK FOR ENGINEERS AND RESEARCHERS

William Andrew This handbook gives comprehensive coverage of all kinds of industrial control systems to help engineers and researchers correctly and efficiently implement their projects. It is an indispensable guide and references for anyone involved in control, automation, computer networks and robotics in industry and academia alike. Whether you are part of the manufacturing sector, large-scale infrastructure systems, or processing technologies, this book is the key to learning and implementing real time and distributed control applications. It covers working at the device and machine level as well as the wider environments of plant and enterprise. It includes information on sensors and actuators; computer hardware; system interfaces; digital controllers that perform programs and protocols; the embedded applications software; data communications in distributed control systems; and the system routines that make control systems more user-friendly and safe to operate. This handbook is a single source reference in an industry with highly disparate information from myriad sources. * Helps engineers and researchers correctly and efficiently implement their projects. * An indispensable guide and references for anyone involved in control, automation, computer networks and robotics. * Equally suitable for industry and academia

OPERATION OF FIRE PROTECTION SYSTEMS

Jones & Bartlett Learning **Fire Science (FESHE)**

ARC WELDING CONTROL

Woodhead Publishing Written by a pioneer in the field, this book covers all aspects of the emerging technology of arc welding. Part one quantitatively describes the dynamic behavior of arc welding, the power sources used, and their effect on welding technology through the basis of control theory. The second part describes new ways of controlling the welding arc through modern electronics. The next two sections establish the first mathematical model of the arc sensor on the basis of control theory and introduce a new method for measuring weldment temperature fields using the colorimetric-imaging method. The fifth and final section explains the idea of recognizing weld grooves with a three-dimensional vision system and automatic programming of the weld path.

INSTRUMENT ENGINEERS' HANDBOOK, VOLUME ONE

PROCESS MEASUREMENT AND ANALYSIS

CRC Press Unsurpassed in its coverage, usability, and authority since its first publication in 1969, the three-volume Instrument Engineers' Handbook continues to be the premier reference for instrument engineers around the world. It helps users select and implement hundreds of measurement and control instruments and analytical devices and design the most cost-effective process control systems that optimize production and maximize safety. Now entering its fourth edition, Volume 1: Process Measurement and Analysis is fully updated with increased emphasis on installation and maintenance consideration. Its coverage is now fully globalized with product descriptions from manufacturers around the world. Béla G. Lipták speaks on Post-Oil Energy Technology on the AT&T Tech Channel.

MECHATRONICS WITH EXPERIMENTS

John Wiley & Sons **Comprehensively covers the fundamental scientific principles and technologies that are used in the design of modern computer-controlled machines and processes. Covers embedded microcontroller based design of machines Includes MATLAB®/Simulink®-based embedded control software development Considers electrohydraulic motion control systems, with extensive applications in construction equipment industry Discusses electric motion control, servo systems, and coordinated multi-axis automated motion control for factory automation applications Accompanied by a website hosting a solution manual**

SENSORS IN SCIENCE AND TECHNOLOGY

FUNCTIONALITY AND APPLICATION AREAS

Springer Nature Sensors are used to measure physical, chemical and biological quantities. The book offers a comprehensive overview of physical principles, functions and applications of sensors. It is structured according to the fields of activity of sensors and shows their application by means of typical examples. Measured variables that can be recorded by sensors are e.g. mechanical, dynamic, thermal, electrical and magnetic. Furthermore, optical and acoustical sensors are discussed in detail in the book. The sensor signals are recorded, processed and converted into control signals for actuators. Such sensor systems are also presented. This book is a translation of the original German 2nd edition *Sensoren in Wissenschaft und Technik* by Ekbert Hering, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2017. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors. The Content Fundamentals of sensor systems · Physical effects for sensor use · Measured variables that can be recorded by sensors · Mechanical measured variables · Thermal measured variables · Electrical and magnetic measured variables · Optical measured variables · Acoustic measured variables · Climatic and meteorological measured variables · Chemical measured variables · Biological and medical measured variables The Target Groups " Engineers and natural scientists in practice " Students and lecturers at universities " Experts in the field of sensor technology The Authors Prof. Dr. Ekbert Hering has been teaching physics, electronics, photonics and business administration at Aalen University since 1971. He was rector of the university, served on various supervisory boards and was the author of 70 textbooks, 45 of which were published by Springer Vieweg. Dr.-Ing. Gert Schönfelder received his doctorate in digital measurement technology. He worked in the field of computer architecture, image-based measurement technology (stereo) and system design of cameras and measurement technology. Since 8 years he is head of development at a manufacturer of pressure sensors.

SENSORS, OPTICAL SENSORS

John Wiley & Sons 'Sensors' is the first self-contained series to deal with the whole area of sensors. It describes general aspects, technical and physical fundamentals, construction, function, applications and developments of the various types of sensors. This volume provides a unique overview of optical sensors. Fundamentals, technical aspects, applications and various measuring techniques in the wide field of optics are described. It also covers light propagation, its measurement, the principles of photoelectric conversion as well as a survey of light sources, detectors and different kinds of optical parts. Five chapters describe detection schemes depending on wavelength, phase, and pulsetime. It also presents topics such as: Instruments approved in industry and novel concepts of optical sensors; Fiber and integrated optics as more recent techniques; Different techniques of optical sensing such as machine vision and signal processing, and for the determination surface morphology and deformation are covered. This volume is an indispensable reference work and text book for both specialists and newcomers, researchers and developers.

INFORMATION TECHNOLOGY AND CAREER EDUCATION

PROCEEDINGS OF THE 2014 INTERNATIONAL CONFERENCE ON INFORMATION TECHNOLOGY AND CAREER EDUCATION (ICITCE 2014), HONG KONG, 9-10 OCTOBER 2014

CRC Press Information Technology and Career Education contains the contributions presented at the 2014 International Conference on Information Technology and Career Education (ICITCE 2014, Hong Kong, China, 9-10 October 2014). The book is divided into two main topics: information technology and vocational technology. Considerable attention is also paid to e-learning.

TODAY'S TECHNICIAN: ADVANCED AUTOMOTIVE ELECTRONIC SYSTEMS, CLASSROOM AND SHOP MANUAL

Cengage Learning TODAY'S TECHNICIAN: ADVANCED AUTOMOTIVE ELECTRONIC SYSTEMS, is an extension of the popular Today's Technician Series that covers all mechanical and electrical systems of automobiles and light trucks. This book is intended for a course in advanced automotive electronic systems and is divided into two volumes: a Classroom Manual and a Shop Manual that separate cognitive and performance learning objectives, respectively. The design is based on features that are known to promote improved student learning. The Classroom Manual contains the principles of operation for the most advanced electrical systems used today and covers design variations of components used by the different vehicle manufacturers. The book builds upon basic facts and theories and will help develop students' knowledge through its extensive coverage of component and system operation. The Shop Manual covers the diagnostic processes for proper repairs and focuses more on the diagnostics of the components used within a system than on how to replace the component. The intent is to guide your students' thought processes toward finding the root cause of the problem, concentrating their attention on becoming a diagnostician and not a parts changer. Your students will learn how to develop a systematic approach to problem solving in order to isolate the root cause of the problem, thereby enhancing their ability to fix products right the first time. Photo Sequences are used to illustrate some of the common diagnostic procedures. Both Manuals are arranged in corresponding chapters, and topics within the chapters are linked between manuals by page references in the margins. Both volumes contain clear and thoughtfully-selected photos and illustrations. The margins of the pages include many special features of the series that are designed to underscore important points made in the running text, highlight safety concerns, and offer real world scenarios that the author has encountered in the shop. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

MEASUREMENT AND SAFETY

CRC Press The Instrument and Automation Engineers' Handbook (IAEH) is the #1 process automation handbook in the world. Volume one of the Fifth Edition, Measurement and Safety, covers safety sensors and the detectors of physical properties. Measurement and Safety is an invaluable resource that: Describes the detectors used in the measurement of process variables Offers application- and method-specific guidance for choosing the best measurement device Provides tables of detector capabilities and other practical information at a glance Contains detailed descriptions of domestic and overseas products, their features, capabilities, and suppliers, including suppliers' web addresses Complete with 163 alphabetized chapters and a thorough index for quick access to specific information, Measurement and Safety is a must-have reference for instrument and automation engineers working in the chemical, oil/gas, pharmaceutical, pollution, energy, plastics, paper, wastewater, food, etc. industries. About the eBook The most important new feature of the IAEH, Fifth Edition is its availability as an eBook. The eBook provides the same content as the print edition, with the addition of thousands of web addresses so that readers can reach suppliers or reference books and articles on the hundreds of topics covered in the handbook. This feature includes a complete bidders' list that allows readers to issue their specifications for competitive bids from any or all potential product suppliers.

ADVANCED INDUSTRIAL CONTROL TECHNOLOGY

William Andrew Control engineering seeks to understand physical systems, using mathematical modeling, in terms of inputs, outputs and various components with different behaviors. It has an essential role in a wide range of control systems, from household appliances to space flight. This book provides an in-depth view of the technologies that are implemented in most varieties of modern industrial control engineering. A solid grounding is provided in traditional control techniques, followed by detailed examination of modern control techniques such as real-time, distributed, robotic, embedded, computer and wireless control technologies. For each technology, the book discusses its full profile, from the field layer and the control layer to the operator layer. It also includes all the interfaces in industrial control systems: between controllers and systems; between different layers; and between operators and systems. It not only describes the details of both real-time operating systems and distributed operating systems, but also provides coverage of the microprocessor boot code, which other books lack. In addition to working principles and operation mechanisms, this book emphasizes the practical issues of components, devices and hardware circuits, giving the specification parameters, install procedures, calibration and configuration methodologies needed for engineers to put the theory into practice. Documents all the key technologies of a wide range of industrial control systems Emphasizes practical application and methods alongside theory and principles An ideal reference for practicing engineers needing to further their understanding of the latest industrial control concepts and techniques

TODAY'S TECHNICIAN: ADVANCED AUTOMOTIVE ELECTRONIC SYSTEMS, CLASSROOM MANUAL AND SHOP MANUAL

Cengage Learning TODAY'S TECHNICIAN: ADVANCED AUTOMOTIVE ELECTRONIC SYSTEMS, Second Edition, helps readers understand, diagnose, and repair the sophisticated electronic systems in today's automobiles. Bridging theory and practice, the text provides an

overview of important electronic systems and outlines real-world symptoms, diagnostics, and repair information. Known for its thorough coverage, accurate technical information, and detailed visuals, this resource prepares users for success on ASE certification exams or as an automotive technician. The Second Edition adds detailed coverage of network architecture and increased coverage of telematic systems, Wi-Fi connectivity, remote start, and stop/start technology. This edition is enhanced with full-color photography and illustrations. Text content aligns with the ASE Education Foundation 2017 accreditation model--including job sheets correlated to specific MLR, AST and MAST tasks. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

HANDBOOK OF OPTICAL SENSORS

CRC Press **Handbook of Optical Sensors** provides a comprehensive and integrated view of optical sensors, addressing the fundamentals, structures, technologies, applications, and future perspectives. Featuring chapters authored by recognized experts and major contributors to the field, this essential reference: Explains the basic aspects of optical sensors and the principles of optical metrology, presenting a brief historical review Explores the role of optical waveguides in sensing and discusses sensor technologies based on intensity and phase modulation, fluorescence, and plasmonic waves Describes wavefront sensing, multiphoton microscopy, and imaging based on optical coherence tomography Covers optical fiber sensing, from light guiding in standard and microstructured optical fibers to sensor multiplexing, distributed sensing, and fiber Bragg grating Offers a broad perspective of the field and identifies trends that could shape the future, such as metamaterials and entangled quantum states of light Handbook of Optical Sensors is an ideal resource for practitioners and those seeking optical solutions for their specific needs, as well as for students and investigators who are the intellectual driving force of optical sensing.

OPTICAL SENSORS

BASICS AND APPLICATIONS

John Wiley & Sons **Providing an overview of the necessary components and the range of applications from light-barriers to high-resolution surface-scanning interferometers, this is a valuable introduction to the technology of optical sensors as well as a reference for experienced practitioners. The first part of the book introduces readers to the basics of sensor principles by describing the most important components that can be found in all optical sensors. Based on this opto-electronic toolbox, the second part then goes on to give numerous examples of optical sensors with respect to their applications.**

PRINCIPLES OF TELEGRAPHY, TELETYPEWRITER

IN SITU INDUSTRIAL APPLICATIONS OF OPTICS

25-27 JUNE 1986, BRUSSELS, BELGIUM

Society of Photo Optical

AUTOMATION IN TEXTILE MACHINERY

INSTRUMENTATION AND CONTROL SYSTEM DESIGN PRINCIPLES

CRC Press **Automation is the use of various control systems for operating equipment such as machinery and processes. In line, this book deals with comprehensive analysis of the trends and technologies in automation and control systems used in textile engineering. The control systems described in all chapters is to dissect the important components of an integrated control system in spinning, weaving, knitting, chemical processing and garment industries, and then to determine if and how the components are converging to provide manageable and reliable systems throughout the chain from fiber to the ultimate customer. Key Features:** • Describes the design features of machinery for operating various textile machineries in product manufacturing • Covers the fundamentals of the instrumentation and control engineering used in textile machineries • Illustrates sensors and basic elements for textile automation • Highlights the need of robotics in textile engineering • Reviews the overall idea and scope of research in designing textile machineries

HANDBOOK OF OPTICAL METROLOGY

PRINCIPLES AND APPLICATIONS

CRC Press **The field of optical metrology offers a wealth of both practical and theoretical accomplishments, and can cite any number of academic papers recording such. However, while several books covering specific areas of optical metrology do exist, until the pages herein were researched, written, and compiled, the field lacked for a comprehensive handbook, one providing an overview of optical metrology that covers practical applications as well as fundamentals. Carefully designed to make information accessible to beginners without sacrificing academic rigor, the Handbook of Optical Metrology: Principles and Applications discusses fundamental principles and techniques before exploring practical applications. With contributions from veterans in the field, as well as from up-and-coming researchers, the Handbook offers 30 substantial and well-referenced chapters. In addition to the introductory matter, forward-thinking descriptions are included in every chapter that make this a valuable reference for all those involved with optical metrology.**

EXPERIMENTAL AERODYNAMICS

CRC Press **Experimental Aerodynamics provides an up to date study of this key area of aeronautical engineering. The field has undergone significant evolution with the development of 3D techniques, data processing methods, and the conjugation of simultaneous measurements of multiple quantities. Written for undergraduate and graduate students in Aerospace Engineering, the text features chapters by leading experts, with a consistent structure, level, and pedagogical approach. Fundamentals of measurements and recent research developments are introduced, supported by numerous examples, illustrations, and problems. The text will also be of interest to those studying mechanical systems, such as wind turbines.**

OPTICAL FIBER COMMUNICATIONS PRINCIPLES AND PRACTICE

Scientific e-Resources **The field of fibre optics communications has exploded over the past two decades. Fibre is an integral part of modern day communication infrastructure and can be found along roads, in buildings, hospitals and machinery. Fibre optic communication has revolutionised the telecommunications industry. It has also made its presence widely felt within the data networking community as well. Using fibre optic cable, optical communications have enabled telecommunications links to be made over much greater distances and with much lower levels of loss in the transmission medium and possibly most important of all, fiber optical communications has enabled much higher data rates to be accommodated. Optical fibers can be used to transmit light and thus information over long distances. Fiber-based systems have largely replaced radio transmitter systems for long-haul optical data transmission. They are widely used for telephony, but also for Internet traffic, long high-speed local area networks (LANs), cable TV (CATV), and increasingly also for shorter distances within buildings. In most cases, silica fibers are used, except for very short distances, where plastic optical fibers can be advantageous. The basic components are light signal transmitter, the optical fiber, and the photo detecting receiver. The additional elements such as fiber and cable splicers and connectors, regenerators, beam splitters, and optical amplifiers are employed to improve the performance of the communication system. The book offers a completely up-to-date, accessible, and in-depth introduction to the principles and applications of optical fiber communications. It describes the recent developments in optical fiber communication materials, devices, components, and systems.**

FIRE AND LIFE SAFETY EDUCATOR: PRINCIPLES AND PRACTICE

Jones & Bartlett Learning **Fire and Life Safety Educator: Principles and Practice, Second Edition Includes Navigate 2 Advantage Access, meets the objectives of NFPA 1035 (2015) for FLSE Levels I, II, III, Public Information Officer, Youth Firesetter Intervention Specialist,**

and Youth Firesetter Program Manager. It is written for practitioners, managers, and supervisors, as well as for those who are new to the FLSE field, covering fire behavior and prevention, code compliance, community risk reduction, risk assessment, and working with the public. Based solidly on research and proven tactics, it describes community outreach methods, how to effectively teach fire and life safety, and how to market prevention and preparedness messages to all age groups. In-depth instruction advises on developing fire and life safety curricula, objectives, lesson plans, and presentations. This second edition covers all aspects of designing, budgeting for, and managing a fire and life safety program; public relations and persuasion tactics; legal considerations; and best professional practices. The importance of program evaluation and how to conduct evaluation is explained. New chapters are included to address the public information officer role and specific responsibilities, Youth Firesetter intervention strategies, and Youth Firesetter program implementation.

HANDBOOK OF LASER TECHNOLOGY AND APPLICATIONS (THREE- VOLUME SET)

CRC Press The invention of the laser was one of the towering achievements of the twentieth century. At the opening of the twenty-first century we are witnessing the burgeoning of the myriad technical innovations to which that invention has led. The Handbook of Laser Technology and Applications is a practical and long-lasting reference source for scientists a

HANDBOOK OF LASER TECHNOLOGY AND APPLICATIONS

VOLUME 2: LASER DESIGN AND LASER SYSTEMS

CRC Press The invention of the laser was one of the towering achievements of the twentieth century. At the opening of the twenty-first century we are witnessing the burgeoning of the myriad technical innovations to which that invention has led. The Handbook of Laser Technology and Applications is a practical and long-lasting reference source for scientists and engineers who work with lasers. The Handbook provides, a comprehensive guide to the current status of lasers and laser systems; it is accessible to science or engineering graduates needing no more than standard undergraduate knowledge of optics. Whilst being a self-contained reference work, the Handbook provides extensive references to contemporary work, and is a basis for studying the professional journal literature on the subject. It covers applications through detailed case studies, and is therefore well suited to readers who wish to use it to solve specific problems of their own. The first of the three volumes comprises an introduction to the basic scientific principles of lasers, laser beams and non-linear optics. The second volume describes the mechanisms and operating characteristics of specific types of laser including crystalline solid - state lasers, semiconductor diode lasers, fibre lasers, gas lasers, chemical lasers, dye lasers and many others as well as detailing the optical and electronic components which tailor the laser's performance and beam delivery systems. The third volume is devoted to case studies of applications in a wide range of subjects including materials processing, optical measurement techniques, medicine, telecommunications, data storage, spectroscopy, earth sciences and astronomy, and plasma fusion research. This vast compendium of knowledge on laser science and technology is the work of over 130 international experts, many of whom are recognised as the world leaders in their respective fields. Whether the reader is engaged in the science, technology, industrial or medical applications of lasers or is researching the subject as a manager or investor in technical enterprises they cannot fail to be informed and enlightened by the wide range of information the Handbook supplies.

ALL-IN-ONE ELECTRONICS SIMPLIFIED

KHANNA PUBLISHING HOUSE The All-in-one Electronics Simplified is comprehensive treatise on the whole gamut of topics in Electronics in Q & A format. The book is primarily intended for undergraduate students of Electronics Engineering and covers six major subjects taught at the undergraduate level students of Electronics Engineering and covers six major subjects taught at the undergraduate level including Electronic Devices and Circuits, Network Analysis , Operational Amplifiers and Linear Integrated Circuits, Digital Electronics, Feedback and Control Systems and Measurements and Instrumentation. Each of the thirty chapters is configured as the Q&A part followed by a large number of Solved Problems. A comprehensive Self-Evaluation Exercise comprising multiple choice questions and other forms of objective type exercises concludes each chapter.

EFFECTIVE PHYSICAL SECURITY

Elsevier Effective Physical Security, Third Edition is a best-practices compendium that details the essential elements to physical security protection. The book contains completely updated sections that have been carefully selected from the previous Butterworth-Heinemann publication, Handbook of Loss Prevention and Crime Prevention, 4E. Designed for easy reference, the Third Edition contains important coverage of environmental design, security surveys, locks, lighting, CCTV as well as a new chapter covering the latest in physical security design and planning for Homeland Security. The new edition continues to serve as a valuable reference for experienced security practitioners as well as students in undergraduate and graduate security programs. - Each chapter has been contributed to by top professionals in the security industry - Over 80 figures illustrate key security concepts discussed - Numerous appendices, checklists, and glossaries support the easy-to-reference organization

VCSEL INDUSTRY

COMMUNICATION AND SENSING

John Wiley & Sons A hands-on reference to the technical, commercial, and industrial aspects of VCSEL technology In VCSEL Industry: Communication and Sensing, a team of distinguished researchers and manufacturing professionals deliver a thorough and practical reference guide to vertical-cavity surface-emitting lasers (VCSELs) for young entrepreneurs, investors, venture capitalists, and researchers. The authors offer comprehensive descriptions of the technology involved, as well as a robust exploration of the industry and commercial landscape in which VCSELs exist. The book contains numerous illustrations and schematics of the anatomy of VCSEL product developments and an insightful discussion of the proliferation of VCSELs in photonics and optics. There is also a dedicated section on photoreceivers used for VCSEL-based data communications and sensing. VCSEL Industry: Communication and Sensing provides readers with an accessible, commercial perspective of an important technology while offering just enough technical detail to make sense of the subject. The book also includes: A thorough introduction to VCSELs, including discussions of semiconductor lasers, materials, wavelengths, and why VCSELs are attractive for photonics applications Comprehensive explorations of the VCSEL industry, including market demands, an industry landscape, descriptions of commercial products based on VCSELs, and business models Practical discussions of VCSELs for data communication, including high-speed VCSELs, gain and parasitic effects on bandwidth and speed, and form factors and standards In-depth examinations of VCSEL arrays for sensing, including high-power VCSELs in consumer electronics Perfect for early-career researchers, engineers, entrepreneurs, investors, and managers, VCSEL Industry: Communication and Sensing will also prove to be an invaluable addition to the libraries of executives from across the semiconductor industry.

HUMAN SYSTEMS ENGINEERING AND DESIGN

PROCEEDINGS OF THE 1ST INTERNATIONAL CONFERENCE ON HUMAN SYSTEMS ENGINEERING AND DESIGN (IHSED2018): FUTURE TRENDS AND APPLICATIONS, OCTOBER 25-27, 2018, CHU-UNIVERSITÉ DE REIMS CHAMPAGNE-ARDENNE, FRANCE

Springer This book focuses on novel design and systems engineering approaches, including theories and best practices, for promoting a better integration of people and engineering systems. It covers a range of hot topics related to: development of activity-centered and user-centered systems; interface design and human-computer interaction; usability and user experience; cooperative, participatory and contextual models; emergent properties of human behavior; innovative materials in manufacturing, and many more. Particular emphasis is placed on applications in sports, healthcare, and medicine. The book, which gathers selected papers presented at the 1st International Conference on Human Systems Engineering and Design: Future Trends and Applications (IHSED 2018), held on October 25-27, 2018, at CHU-Université de Reims Champagne-Ardenne, France, provides researchers, practitioners and program managers with a snapshot of the state-of-the-art and current challenges in the field of human systems engineering and design.

INTERNATIONAL ENCYCLOPEDIA OF ROBOTICS

Wiley-Interscience

TEMPERATURE SENSING

BoD - Books on Demand Temperature is the most often-measured environmental quantity and scientists are continuously improving ways of sensing it. To present their work in the field of temperature sensing, researchers from distant parts of the world have joined their efforts and contributed their ideas according to their interest and engagement. Their articles will give you the opportunity to understand concepts and uses of fiber-optic sensing technology. The optical fiber Mach-Zehnder interferometer for temperature sensing is presented, as well as the optical fiber-distributed temperature sensor and fiber Bragg grating-based sensor. You can learn about tunable diode laser absorption spectroscopy and its various industrial applications. Last but not least, cutting temperature measurements during the machining of aluminum alloys provides us with an insight into the correlation between cutting conditions, mechanical strength of the aluminum alloy, and the cutting temperature measured using the tool-workpiece thermocouple system. The editors hope that the presented contributions will allow both professionals and readers not involved in the immediate field to understand and enjoy the topic.

HANDBOOK OF OPTOELECTRONICS

CONCEPTS, DEVICES, AND TECHNIQUES (VOLUME ONE)

CRC Press Handbook of Optoelectronics offers a self-contained reference from the basic science and light sources to devices and modern applications across the entire spectrum of disciplines utilizing optoelectronic technologies. This second edition gives a complete update of the original work with a focus on systems and applications. Volume I covers the details of optoelectronic devices and techniques including semiconductor lasers, optical detectors and receivers, optical fiber devices, modulators, amplifiers, integrated optics, LEDs, and engineered optical materials with brand new chapters on silicon photonics, nanophotonics, and graphene optoelectronics. Volume II addresses the underlying system technologies enabling state-of-the-art communications, imaging, displays, sensing, data processing, energy conversion, and actuation. Volume III is brand new to this edition, focusing on applications in infrastructure, transport, security, surveillance, environmental monitoring, military, industrial, oil and gas, energy generation and distribution, medicine, and free space. No other resource in the field comes close to its breadth and depth, with contributions from leading industrial and academic institutions around the world. Whether used as a reference, research tool, or broad-based introduction to the field, the Handbook offers everything you need to get started. (The previous edition of this title was published as Handbook of Optoelectronics, 9780750306461.) John P. Dakin, PhD, is professor (emeritus) at the Optoelectronics Research Centre, University of Southampton, UK. Robert G. W. Brown, PhD, is chief executive officer of the American Institute of Physics and an adjunct full professor in the Beckman Laser Institute and Medical Clinic at the University of California, Irvine.

HANDBOOK OF OPTOELECTRONICS (TWO-VOLUME SET)

CRC Press A field as diverse as optoelectronics needs a reference that is equally versatile. From basic physics and light sources to devices and state-of-the-art applications, the Handbook of Optoelectronics provides comprehensive, self-contained coverage of fundamental concepts and practical applications across the entire spectrum of disciplines encompassed by optoelectronics. The handbook unifies a broad array of current research areas with a forward-looking focus on systems and applications. Beginning with an introduction to the relevant principles of physics, materials science, engineering, and optics, the book explores the details of optoelectronic devices and techniques including semiconductor lasers, optical detectors and receivers, optical fiber devices, modulators, amplifiers, integrated optics, LEDs, and engineered optical materials. Applications and systems then become the focus, with sections devoted to industrial, medical, and commercial applications, communications, imaging and displays, sensing and data processing, spectroscopic analysis, the art of practical optoelectronics, and future prospects. This extensive resource comprises the efforts of more than 70 world-renowned experts from leading industrial and academic institutions around the world and includes many references to contemporary works. Whether used as a field reference, as a research tool, or as a broad and self-contained introduction to the field, the Handbook of Optoelectronics places everything you need in a unified, conveniently organized format.

MECHATRONICS

John Wiley & Sons Incorporated Mechatronics is the design and development of computer-controlled mechanical systems, such as the fuel-efficient engine of today's family car. This comprehensive book brings together the knowledge and techniques of the major technical fields and explores the theory behind a wide range of basic devices. It then brings all this knowledge together in various motion control lab experiments, which provide readers with practical experience in designing circuits and writing software. (Midwest).

INTERNET OF THINGS FROM HYPE TO REALITY

THE ROAD TO DIGITIZATION

Springer Nature This revised textbook presents updated material on its core content: an end-to-end IoT architecture that is comprised of devices, network, compute, storage, platform, applications along with management and security components. As with the second edition, it is organized into six main parts: an IoT reference model; fog computing and the drivers; IoT management and applications; smart services in IoT; IoT standards; and case studies. This edition's features include overhaul of the IoT Protocols (Chapter 5) to include an expanded treatment of low-power wide area networks including narrow band IoT (NB-IoT) protocol, updated IoT platforms and capabilities (Chapter 7) to include comparison of commercially available platforms (e.g. AWS IoT Platform, Google Cloud IoT Platform, Microsoft Azure IoT Platform, and PTC ThinkWorx), updated security (Chapter 8) to include approaches for securing IoT devices with examples of IoT devices used in security attacks and associated solutions including MUD and DICE, and finally new Appendix B to include six IoT projects detailed for students.

CERAMIC SENSORS

TECHNOLOGY AND APPLICATIONS

CRC Press From the Author's Preface Ceramic sensors have been in use for more than thirty years. Since ceramics exhibit a number of specific characteristics that enable their cost to become lower and their reliability to increase, they have occupied a significant position in sensor technology. This is why many companies and universities have directed their efforts towards investigating and developing new ceramic sensors and expanding their areas of application. To the best of our knowledge., there [has been] no book treating different sensors on the basis of their common physical and chemical properties, technological principles, and applications. This book [is] a detailed survey of ceramic sensors and a generalization of the results achieved in this field so far. Ceramic sensors for different physical quantities are discussed without going too deep into theory... The concept of ceramic sensors includes all sensors that are produced using ceramic technology. It also covers thick film sensors, since from a structural and technological point of view, they can be regarded as a variety of ceramic sensors. The subject of scientific research in this book is humidity, gas, temperature, and pressure sensors on the basis of semiconductor and dielectric ceramic materials and solid electrolytes. Special attention is paid to the physical and chemical, as well as the technological, bases of ceramic sensors, their classification, the types of materials used... , the methods of controlling their parameters and characteristics, the areas of application, and the electric circuits for connecting the sensors.

ADVANCED NANOFIBROUS MATERIALS MANUFACTURE TECHNOLOGY BASED ON ELECTROSPINNING

CRC Press This book comprehensively addresses advanced nanofiber manufacturing based on electrospinning technology. The principles, relationships between process parameters and structure, morphology and performance of electrospun nanofibers and nanomaterials, and the methods for enhanced field intensity and uniform distribution are discussed. The electric field intensity and distribution during electrospinning is also analyzed based on finite element analysis on both the needle and the needleless electrospinning. Furthermore, the modification techniques for improved nanomaterials strength are covered, aiming to provide effective avenues towards the manufacture of stronger nanofiber or nanomaterial products.

IEC 61850-BASED SMART SUBSTATIONS

PRINCIPLES, TESTING, OPERATION AND MAINTENANCE

Academic Press IEC 61850-Based Smart Substations: Principles, Testing, Operation and Maintenance systematically presents principles, testing approaches, and the operation and maintenance technologies of such substations from the perspective of real-world application. The book consists of chapters that cover a review of IEC 61850 based smart substations, substation configuration technology, principles and testing technologies for the smart substation, process bus, substation level, time setting and synchronization, and cybersecurity. It gives detailed information on testing processes and approaches, operation and maintenance technologies, and insights gained through practical experience. As IEC 61850 based smart substations have played a significant role in smart grids, realizing information sharing and device interoperability, this book provides a timely resource on the topics at hand. Contributes to the overall understanding of standard IEC 61850, analyzing principles and features Introduces best practices derived from hundreds of smart substation engineering applications Summarizes current research and insights gained from practical experience in the testing, operation and maintenance of smart substation projects in China Gives systematic and detailed information on testing technology Introduces novel technologies for next-generation substations

ANALYTICAL CHEMISTRY OF AEROSOLS

SCIENCE AND TECHNOLOGY

CRC Press Until the 1980s, researchers studied and measured only the physical properties of aerosols. Since the 80s, however, interest in the physicochemical properties of aerosols has grown tremendously. Scientists in environmental hygiene, medicine, and toxicology have recognized the importance held by the chemical composition and properties of aerosols and the interactions of inhaled, "bad" aerosols. This book offers the first comprehensive treatment of modern aerosol analytical methods, sampling and separation procedures, and environmental applications, and offers critical reviews of the latest literature. This important field has developed rapidly in the last 15 years, but until now, no book effectively summarized or analyzed the existing research. Analytical Chemistry of Aerosols reviews procedures, techniques, and trends in the measurement and analysis of atmospheric aerosols. With contributions from acknowledged, international experts, the book discusses various methods of bulk analysis, single particle analysis, and the analysis of special aerosol systems, including fibrous and bacterial aerosols.

HANDBOOK OF LOSS PREVENTION AND CRIME PREVENTION

Elsevier The Handbook of Loss Prevention and Crime Prevention, Fourth Edition, is the most comprehensive reference of its kind, covering the latest information on every topic from community-oriented policing to physical security, workplace violence, CCTV, information security, homeland security, and a host of specialty areas. The handbook shows how to prevent or minimize corporate losses, including security breaches, theft, and lack of resources due to natural or man-made disaster. This revised volume brings together the expertise of more than forty security and crime prevention experts who provide practical information and advice. Each chapter provides a wealth of information that can be put to use immediately. This is a must-have reference for security managers, security students, and all levels of security professionals. * Covers every important topic in the field, including the latest on high-tech security systems, homeland security, and many specialty areas * Brings together the expertise of more than 40 security and crime prevention experts * Each chapter provides a wealth of practical information that can be put to use immediately