Johannessen E A And Wang L And Wyse C And Cumming D

Low-power sensors and their applications in various fields ranging from military to civilian lives have made tremendous progress in the recent years. Low-power and extended battery life are the key focuses for long term, reliable and easy operation of these sensors. Sensors and Low Power Signal Processing provides a general overview of a sensor's working principle and a discussion of the emerging sensor technologies including chemical, electro-chemical and MEMS based sensors. Also included is a discussion on design challenges associated with low-power analog circuits and the schemes to overcome them. Finally, a short discussion of some of the simple wireless telemetry schemes best suited for low-power sensor applications and sensor packaging issues is discussed. Applications and sensor prototypes included are environmental monitoring, health care monitoring and issues related to the development of sensor prototypes and associated electronics to achieve high signal-to-noise ratio will also be presented.

A comprehensive guide to privileged structures and their application in the discovery of new drugs The use of privileged structures is a viable strategy in the discovery of new medicines at the lead optimization stages of the drug discovery process. Privileged Structures in Drug Discovery offers a comprehensive text that reviews privileged structures from the point of view of medicinal chemistry and contains the synthetic routes to these structures. In this text, the author—a noted expert in the field—includes an historical perspective on the topic, presents a practical compendium to privileged structures, and offers an informed perspective on the future direction for the field. The book describes the up-to-date and state-of-the-art methods of organic synthesis that describe the use of privileged structures that are of most interest. Chapters included information on benzodiazepines, 1,4-dihydropyridines, biaryls, 4-(hetero)arylpiperidines, spiropiperidines, 2-aminopyrimidines, 2-aminothiazoles, 2-(hetero)arylindoles, tetrahydroisoquinolines, 2,2-dimethylbenzopyrans, hydroxamates, and bicyclic pyridines containing ring-junction nitrogen as privileged scaffolds in medicinal chemistry. Numerous, illustrative case studies document the current use of the privileged structures in the discovery of drugs. This important volume: Describes the drug compounds that have successfully made it to the marketplace and the chemistry associated with them Offers the experience from an author who has worked in many therapeutic areas of medicinal chemistry Details many of the recent developments in organic chemistry that prepare target molecules Includes a wealth of medicinal chemistry case studies that clearly illustrate the use of privileged structures Designed for use by industrial medicinal chemists and process chemists, academic organic and medicinal chemists, as well as chemistry students and faculty, Privileged Structures in Drug Discovery offers a current guide to organic synthesis methods to access the privileged structures of interest, and contains medicinal chemistry case studies that document their application.

Collection of selected, peer reviewed papers from the 2014 2nd International Conference on Mechatronics and Industrial Informatics (ICMII 2014), May 30-31, 2014, Guangzhou, China. The 213 papers are grouped as follows: Chapter 1: Applied Mechanics, Mechanisms and Dynamics, Chapter 2: Materials Processing and Advanced Manufacturing Technology,

Chapter 3: Product Design, Manufacturing and Industrial Informatics Applications, Chapter 4: Computer Information Processing Technology, Artificial Intelligence and Intelligent Algorithms, Chapter 5: Sound, Image, Signal and Video Processing and Technologies, Chapter 6: Measurement Technology, Instruments and Sensors, Detection Technologies, Chapter 7: Automation Technology, Control System Modeling and Simulation Technology, Chapter 8: Power Engineering and Control, Power Electronics, Chapter 9: Vehicle Control Systems and Intelligent Traffic, Chapter 10: Communications Technology and Materials, Chapter 11: Computer Network and Information Security, Chapter 12: Database Systems and Software Development, Chapter 13: E-Commerce, E-Government, Internet Technologies, WEB Design, Chapter 14: Engineering Education and Engineering Management

In this comprehensive work, experts in the field detail recent advances in medical and biological microwave sensors and systems, with chapters on topics such as implantable sensors, wearable microwave tags, and UWB technology. Each chapter explores the theory behind the technology, as well as its design and implementation. This is supported by practical examples and details of experimental results, along with discussion of system design, design trade-offs, and possible constraints and manufacturing issues. Applications described include intracranial pressure monitoring, vital signs monitoring, and non-invasive molecular and cellular investigations. Presenting new research and advances in the field, and focusing on the state of the art in medical and biological microwave sensors, this work is an invaluable resource for enthusiastic researchers and practicing engineers in the fields of electrical engineering, biomedical engineering, and medical physics.

Three-Electrodes Amperometric Biosensor Approach

Body Sensor Networks

Recent Trends in Manufacturing and Materials Towards Industry 4.0

Capsule Endoscopy Simplified

Handbook of Biomedical Telemetry

Perception-Action Cycle

Because of their high noise immunity and low static power supply drain, complementary metal-oxide-semiconductor (CMOS) devices produce less heat than other forms of logic and allow a high density of logic functions on a chip. These beneficial characteristics have fueled the use of CMOS image sensors in consumer electronics, robot vision, biotechnology, and medicine. With the introduction of smart functions in CMOS image sensors, even more versatile applications are now possible. Exploring this popular technology, Smart CMOS Image Sensors and Applications focuses on the smart functions implemented in CMOS image sensors as well as the applications of these sensors. After discussing the history of smart CMOS image sensors, the book describes the fundamental elements of CMOS image sensors. It covers some optoelectronic device physics and introduces typical CMOS image sensor structures, such as an active pixel sensor (APS). Subsequent chapters elucidate the functions and materials of smart CMOS image sensors and present examples of smart imaging. The final chapter explores various applications of smart CMOS image sensors. Several appendices supply a range of information on constants, illuminance, MOSFET characteristics, and optical resolution. This book provides a

firm foundation in existing smart CMOS image sensor technology and applications, preparing you for the next phase of smart CMOS image sensors.

Owing to the advances of vacuum ultraviolet and ultrafast lasers and third generation synchrotron sources, the research on photoionization, photoelectrons, and photodetachment has gained much vitality in recent years. These new light sources, together with ingenious experimental techniques, such as the coincidence imaging, molecular beam, pulsed field ionization photoelectron, mass-analyzed threshold ion, and pulsed field ion pair schemes, have allowed spectroscopic, dynamic, and energetic studies of gaseous species to a new level of detail and accuracy. Profitable applications of these methods to liquids are emerging.This invaluable two-volume review consists of twenty-two chapters, focusing on recent developments in photoionization and photodetachment studies of atoms; molecules, transient species, clusters, and liquids.

A must-have compendium on biomedical telemetry for all biomedical professional engineers, researchers, and graduate students in the field Handbook of Biomedical Telemetry describes the main components of a typical biomedical telemetry system, as well as its technical challenges. Written by a diverse group of experts in the field, it is filled with overviews, highly-detailed scientific analyses, and example applications of biomedical telemetry. The book also addresses technologies for biomedical sensing and design of biomedical telemetry devices with special emphasis on powering/integration issues and materials for biomedical telemetry applications. Handbook of Biomedical Telemetry: Describes the main components of a typical biomedical telemetry system, along with the technical challenges Discusses issues of spectrum regulations, standards, and interoperability—while major technical challenges related to advanced materials, miniaturization, and biocompatibility issues are also included Covers body area electromagnetics, inductive coupling, antennas for biomedical telemetry, intra-body communications, non-RF communication links for biomedical telemetry (optical biotelemetry), as well as safety issues, human phantoms, and exposure assessment to high-frequency biotelemetry fields Presents biosensor network topologies and standards; context-aware sensing and multi-sensor fusion; security and privacy issues in biomedical telemetry; and the connection between biomedical telemetry and telemedicine Introduces clinical applications of Body Sensor Networks (BSNs) in addition to selected examples of wearable, implantable, ingestible devices, stimulator and integrated mobile healthcare system paradigms for monitoring and therapeutic intervention Covering biomedical telemetry devices, biosensor network topologies and standards, clinical applications, wearable and implantable devices, and the effects on the mobile healthcare system, this compendium is a must-have for professional engineers, researchers, and graduate students.

This book constitutes the refereed proceedings of the IFIP International Conference on Network and Parallel Computing, NPC 2004, held in Wuhan, China in October 2004. Also included are selected refereed papers from two workshops associated with NPC 2004. The 46 revised full papers and 23 revised short papers presented together with abstracts of 5 invited presentations were selected from a total of 338 submissions. The 25 workshop revised papers included also were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on grid computing, peer-to-peer computing, Web techniques, cluster computing, parallel programming environments, network

architecture, network security, network storage, intelligent sensor networks, and multimedia modeling and security in next generation network information systems.

Index Medicus

Introduction to Fluorescence Sensing

Medical Biosensors for Point of Care (POC) Applications

Allosterism in Drug Discovery

IoT Applications Computing

Selected Articles from iM3F 2020, Malaysia

This volume presents the proceedings of Medicon 2016, held in Paphos, Cyprus. Medicon 2016 is the XIV in the series of regional meetings of the International Federation of Medical and Biological Engineering (IFMBE) in the Mediterranean. The goal of Medicon 2016 is to provide updated information on the state of the art on Medical and Biological Engineering and Computing under the main theme "Systems Medicine for the Delivery of Better Healthcare Services". Medical and Biological Engineering and Computing cover complementary disciplines that hold great promise for the advancement of research and development in complex medical and biological systems. Research and development in these areas are impacting the science and technology by advancing fundamental concepts in translational medicine, by helping us understand human physiology and function at multiple levels, by improving tools and techniques for the detection, prevention and treatment of disease. Medicon 2016 provides a common platform for the cross fertilization of ideas, and to help shape knowledge and scientific achievements by bridging complementary disciplines into an interactive and attractive forum under the special theme of the conference that is Systems Medicine for the Delivery of Better Healthcare Services. The programme consists of some 290 invited and submitted papers on new developments around the Conference theme, presented in 3 plenary sessions, 29 parallel scientific sessions and 12 special sessions.

The evolution of emerging and innovative technologies based on Industry 4.0 concepts are transforming society and industry into a fully digitized and networked globe. Sensing, communications, and computing embedded with ambient intelligence are at the heart of the Internet of Things (IoT), the Industrial Internet of Things (IIoT), and Industry 4.0 technologies with expanding applications in manufacturing, transportation, health, building automation, agriculture, and the environment. It is expected that the emerging technology clusters of ambient intelligence computing will not only transform modern industry but also advance societal health and wellness, as well as and make the environment more sustainable. This book uses an interdisciplinary approach to explain the complex issue of scientific and technological innovations largely based on intelligent computing.

An authoritative guide to theory and applications of heat transfer in humans Theory and Applications of Heat Transfer in Humans 2V Set offers a reference to the field of heating and cooling of tissue, and associated damage. The author—a noted expert in the field—presents, in this book, the fundamental physics and physiology related to the field, along with some of the

recent applications, all in one place, in such a way as to enable and enrich both beginner and advanced readers. The book provides a basic framework that can be used to obtain 'decent' estimates of tissue temperatures for various applications involving tissue heating and/or cooling, and also presents ways to further develop more complex methods, if needed, to obtain more accurate results. The book is arranged in three sections: The first section, named 'Physics', presents fundamental mathematical frameworks that can be used as is or combined together forming more complex tools to determine tissue temperatures; the second section, named 'Physiology', presents ideas and data that provide the basis for the physiological assumptions needed to develop successful mathematical tools; and finally, the third section, named 'Applications', presents examples of how the marriage of the first two sections are used to solve problems of today and tomorrow. This important text is the vital resource that: Offers a reference book in the field of heating and cooling of tissue, and associated damage. Provides a comprehensive theoretical and experimental basis with biomedical applications Shows how to develop and implement both, simple and complex mathematical models to predict tissue temperatures Includes simple examples and results so readers can use those results directly or adapt them for their applications Designed for students, engineers, and other professionals, a comprehensive text to the field of heating and cooling of tissue that includes proven theories with applications. The author reveals how to develop simple and complex mathematical models, to predict tissue heating and/or cooling, and associated damage.

This second edition of Dissipative Systems Analysis and Control has been substantially reorganized to accommodate new material and enhance its pedagogical features. It examines linear and nonlinear systems with examples of both in each chapter. Also included are some infinite-dimensional and nonsmooth examples. Throughout, emphasis is placed on the use of the dissipative properties of a system for the design of stable feedback control laws.

Philosophical Transactions of the Royal Society of London

Theory and Applications of Heat Transfer in Humans

Paradigms and Applications

Artificial Neural Networks – ICANN 2009

Bioelectronics and Medical Devices

NPC 2004

This new volume provides an abundance of information on new biomedical applications being used today. The book covers a wide range of concepts and technologies, discussing such modern technological methods as the Internet of Things, e-pills, biomedical sensors, support vector machines, wireless devices, image and signal processing in e-health, and machine learning. It also includes a discussion on software implementation for the devices used in biomedical applications. The different types of antennas, including antennas using RF energy harvesting for biomedical applications, are covered as well.

Fluorescence sensing is a rapidly developing field of research and technology. Its target is nearly the whole world of natural and synthetic

compounds being detected in different media including living bodies. The application area range from control of industrial processes to environment monitoring and clinical diagnostics. Among different detection methods fluorescence techniques are distinguished by ultimate sensitivity, high temporal and spatial resolution and versatility that allows not only remote detection of different targets but their imaging within the living cells. The basic mechanism of sensing is the transmission of the signal produced by molecular interaction with the target to fluorescent molecules, nanoparticles and nanocomposites with the detection by devices based on modern electronics and optics. In this interdisciplinary field of research and development the book is primarily intended to be a guide for students and young researchers. It is also addressed to professionals involved in active research and product development serving as a reference for the recent achievements. The users of these products will find description of principles that could allow proper selection of sensors for particular needs. Making a strong link between education, research and product development, this book discusses future directions.
Microwave photonics and information optics provide high bandwidth and precision along with ultrafast speed at a low cost. In order to reduce noise at the communication trans-receivers, scattering in the devices needs to be decreased, which can be achieved by replacing optoelectronic devices with photonic devices because in the latter only photons propagate electromagnetic waves. Contemporary Developments in High-Frequency Photonic Devices is a crucial research book that examines high-frequency photonics and their applications in communication engineering. Featuring coverage on a wide range of topics such as metamaterials, optoelectronic devices, and plasmonics, this book is excellent for students, researchers, engineers, and professionals.
Molecular imaging of drugs or drug carriers is a valuable tool that can provide important information on spatiotemporal distribution of drugs, allowing improved drug distribution at target sites. Chemically labelled drugs can be used to both diagnose and treat diseases. This book introduces the topic of image guided drug delivery and covers the latest imaging techniques and developments in theranostics, highlighting the interdisciplinary nature of this field as well as its translational ability. These technologies and techniques hold potential for individualised, safer therapies. The book introduces the chemistry behind labelling drugs or drug carriers for imaging. It then discusses current scientific progress in the discovery and development of theranostic agents as well as the latest advances in triggered drug delivery. Novel imaging techniques that can be combined with therapeutics are presented, as well as results and findings from early clinical trials. This text will provide postgraduates and researchers in various disciplines associated with drug discovery, including chemistry, device engineering, oncology, neurology, cardiology, imaging, and nanoscience, an overview of this important field where several disciplines have been combined to improve treatments. Readers will be introduced to techniques that can be translated to the clinic and be applied widely.
New Trends in Applied Artificial Intelligence
Data Engineering for Smart Systems
Single-chip Wireless Microsystems for Multichannel Neural Biopotential Recording
Dissipative Systems Analysis and Control
Theory and Applications
Deep Learning and IoT in Healthcare Systems
This book presents a remarkable collection of chapters that cover a wide range of topics

in the areas of information and communication technologies and their real-world applications. It gathers the Proceedings of the Future of Information and Communication Conference 2019 (FICC 2019), held in San Francisco, USA from March 14 to 15, 2019. The conference attracted a total of 462 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. Following a double-blind peer review process, 160 submissions (including 15 poster papers) were ultimately selected for inclusion in these proceedings. The papers highlight relevant trends in, and the latest research on: Communication, Data Science, Ambient Intelligence, Networking, Computing, Security, and the Internet of Things. Further, they address all aspects of Information Science and communication technologies, from classical to intelligent, and both the theory and applications of the latest technologies and methodologies. Gathering chapters that discuss state-of-the-art intelligent methods and techniques for solving real-world problems, along with future research directions, the book represents both an interesting read and a valuable asset.

The last decade has witnessed a rapid surge of interest in new sensing and monitoring devices for wellbeing and healthcare. One key development in this area is wireless, wearable and implantable in vivo monitoring and intervention. A myriad of platforms are now available from both academic institutions and commercial organisations. They permit the management of patients with both acute and chronic symptoms, including diabetes, cardiovascular diseases, treatment of epilepsy and other debilitating neurological disorders. Despite extensive developments in sensing technologies, there are significant research issues related to system integration, sensor miniaturisation, low-power sensor interface, wireless telemetry and signal processing. In the 2nd edition of this popular and authoritative reference on Body Sensor Networks (BSN), major topics related to the latest technological developments and potential clinical applications are discussed, with contents covering. Biosensor Design, Interfacing and Nanotechnology Wireless Communication and Network Topologies Communication Protocols and Standards Energy Harvesting and Power Delivery Ultra-low Power Bio-inspired Processing Multi-sensor Fusion and Context Aware Sensing Autonomic Sensing Wearable, Ingestible Sensor Integration and

Exemplar Applications System Integration and Wireless Sensor Microsystems The book also provides a comprehensive review of the current wireless sensor development platforms and a step-by-step guide to developing your own BSN applications through the use of the BSN development kit.

Advances in research have led to the use of robotics in a range of surgical applications. Medical robotics: Minimally invasive surgery provides authoritative coverage of the core principles, applications and future potential of this enabling technology. Beginning with an introduction to robot-assisted minimally invasive surgery (MIS), the core technologies of the field are discussed, including localization and tracking technologies for medical robotics. Key applications of robotics in laparoscopy, neurology, cardiovascular interventions, urology and orthopaedics are considered, as well as applications for ear, nose and throat (ENT) surgery, vitreoretinal surgery and natural orifice transluminal endoscopic surgery (NOTES). Microscale mobile robots for the circulatory system and mesoscale robots for the gastrointestinal tract are investigated, as is MRI-based navigation for in vivo magnetic microrobots. Finally, the book concludes with a discussion of ethical issues related to the use of robotics in surgery. With its distinguished editor and international team of expert contributors, Medical robotics: Minimally invasive surgery is a comprehensive guide for all those working in the research, design, development and application of medical robotics for surgery. It also provides an authoritative introduction for academics and medical practitioners working in this field. Provides authoritative coverage of the core principles, applications and future potential of medical robotics Introduces robot-assisted minimally invasive surgery (MIS), including the core technologies of the field and localization and tracking technologies for medical robotics Considers key applications of robotics in laparoscopy, neurology, cardiovascular interventions, urology and orthopaedics

This book describes ultra low power capacitive sensor interfaces, and presents the realization of a very low power generic sensor interface chip that is adaptable to a broad range of capacitive sensors. The book opens by reviewing important design aspects for autonomous sensor systems, discusses different building blocks, and presents the

modular architecture for the generic sensor interface chip. Finally, the generic sensor interface chip is shown in state-of-the-art applications.

Wireless Mobile Communication and Healthcare

Digest of Technical Papers

Photoionization and Photodetachment

Proceedings of the Workshop on Frontiers in Electronics 2009

Smart CMOS Image Sensors and Applications

Proceedings of the 2019 Future of Information and Communication Conference (FICC), Volume 1

This edited volume Wearable Technologies is a collection of reviewed and relevant research chapters, offering a comprehensive overview of recent developments in the field of computer engineering. The book comprises single chapters authored by various researchers and edited by an expert active in the computer engineering research area. All chapters are complete in themselves but united under a common research study topic. This publication aims at providing a thorough overview of the latest research efforts.

The perception-action cycle is the circular flow of information that takes place between the organism and its environment in the course of a sensory-guided sequence of behaviour towards a goal. Each action causes changes in the environment that are analyzed bottom-up through the perceptual hierarchy and lead to the processing of further action, top-down through the executive hierarchy, toward motor effectors. These actions cause new changes that are analyzed and lead to new action, and so the cycle continues. The Perception-action cycle: Models, architectures and hardware book provides focused and easily accessible reviews of various aspects of the perception-action cycle. It is an unparalleled resource of information that will be an invaluable companion to anyone in constructing and developing models, algorithms and hardware implementations of autonomous machines empowered with cognitive capabilities. The book is divided into three main parts. In the first part, leading computational neuroscientists present brain-inspired models of perception, attention, cognitive control, decision making, conflict resolution and monitoring, knowledge representation and reasoning, learning and memory, planning and action, and consciousness grounded on experimental data. In the second part, architectures, algorithms, and systems with cognitive capabilities and minimal guidance from the brain, are discussed. These architectures, algorithms, and systems are inspired from the areas of cognitive science, computer vision, robotics, information theory, machine learning, computer agents and artificial intelligence. In the third part, the analysis, design and implementation of hardware systems with robust cognitive abilities from the areas of mechatronics, sensing technology, sensor fusion, smart sensor networks, control rules, controllability, stability, model/knowledge representation, and reasoning are discussed.

Capsule Endoscopy Simplified is a comprehensive reference for all gastroenterologists that are performing capsule

endoscopic procedures. Inside you will find relevant information regarding the equipment used for the procedure, patient preparation, interpretation, and management. Drs. Roberto de Franchis, Blair S. Lewis, and Daniel S. Mishkin provide data, as well as experience, in addressing state-of-the-art capsule endoscopy in regards to small bowel imaging. The pages of this timely book are full of essential information regarding the trials and tribulations that gastroenterologists may encounter to ensure the best possible patient care. What is covered inside: • Pre-capsule clinical evaluation • Data and image transfer • Review of normal findings • Pathology to recognize such as Crohn's disease and celiac disease • Capsule retention • Esophageal capsule, colon capsule, and other capsule systems • Pearls from the experts Capsule Endoscopy Simplified includes full color images as well as an informative accompanying DVD. This concise, user-friendly book offers "tricks of the trade," focusing on key elements one needs to know in order to be successful in capsule endoscopy and small bowel imaging. While providing today's most advanced information, Capsule Endoscopy Simplified is ideal for gastroenterologists, gastroenterology fellows, and nurses that are either new or in need of a quick and concise refresher to capsule endoscopy.

This book presents part of the proceedings of the Manufacturing and Materials track of the iM3F 2020 conference held in Malaysia. This collection of articles deliberates on the key challenges and trends related to manufacturing as well as materials engineering and technology in setting the stage for the world in embracing the fourth industrial revolution. It presents recent findings with regards to manufacturing and materials that are pertinent towards the realizations and ultimately the embodiment of Industry 4.0, with contributions from both industry and academia.

Wearable Technologies

Second International ICST Conference, MobiHealth 2011, Kos Island, Greece, October 5-7, 2011. Revised Selected Papers

Models, Architectures, and Hardware

MEDICON 2016, March 31st-April 2nd 2016, Paphos, Cyprus

Series B.

Proceedings of the IEEE Engineering in Medicine and Biology Society, Region 8 International Conference

This book constitutes the refereed proceedings of the 20th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, IEA/AIE 2007, held in Kyoto, Japan. Coverage includes text processing, fuzzy system applications, real-world interaction, data mining, machine learning chance discovery and social networks, e-commerce, heuristic search application systems, and other applications.

This book constitutes the refereed proceedings of the Second International ICST Conference on Wireless Mobile Communication and Healthcare, MobiHealth 2011, held on Kos Island, Greece, in October 2011. The 60 revised full papers presented were carefully reviewed and selected from more than 80 submissions. The papers are organized in 10 sessions and two workshops with topics covering intrabody communications, chronic disease monitoring and management, ambient assistive technologies, implantable and wearable sensors, emergency and disaster applications.

Although the concept of allosterism has been known for over half a century, its application in drug discovery has exploded in recent

years. The emergence of novel technologies that enable molecular-level ligand-receptor interactions to be studied in studied in unprecedented detail has driven this trend. This book, written by the leaders in this young research area, describes the latest developments in allosterism for drug discovery. Bringing together research in a diverse range of scientific disciplines, Allosterism in Drug Discovery is a key reference for academics and industrialists interested in understanding allosteric interactions. The book provides an in-depth review of research using small molecules as chemical probes and drug candidates that interact allosterically with proteins of relevance to life sciences and human disease. Knowledge of these interactions can then be applied in the discovery of the novel therapeutics of the future. This book will be useful for people working in all disciplines associated with drug discovery in academia or industry, as well as postgraduate students who may be working in the design of allosteric modulators.

This new volume discusses the applications and challenges of deep learning and the internet of things for applications in healthcare. It describes deep learning techniques in conjunction with IoT used by practitioners and researchers worldwide. The authors explore the convergence of IoT and deep learning to enable things to communicate, share information, and coordinate decisions. The book includes deep feedforward networks, regularization, optimization algorithms, convolutional networks, sequence modeling, and practical methodology. Chapters look at assistive devices in healthcare, alerting and detection devices, energy efficiency in using IoT, data mining for gathering health information for individuals with autism, IoT for mobile applications, and more. The text also offers mathematical and conceptual background that presents the latest technology as well as a selection of case studies.

Proceedings of SSIC 2021

Applications and Technology

A New Beginning for Human Health : 17-21 September, 2003, Cancún, Mexico

Medicinal Chemistry and Synthesis

Mechatronics and Industrial Informatics II

Frontiers in Electronics is divided into four sections: advanced terahertz and photonics devices; silicon and germanium on insulator and advanced CMOS and MOSHFETs; nanomaterials and nanodevices; and wide band gap technology for high power and UV photonics. This book will be useful for nano-microelectronics scientists, engineers, and visionary research leaders. It is also recommended to graduate students working at the frontiers of the nanoelectronics and microscience.

Solid-state batteries hold the promise of providing energy storage with high volumetric and gravimetric energy densities at high power densities, yet with far less safety issues relative to those associated with conventional liquid or gel-based lithium-ion batteries. Solid-state batteries are envisioned to be useful for a broad spectrum of energy storage

applications, including powering automobiles and portable electronic devices, as well as stationary storage and load-leveling of renewably generated energy. This comprehensive handbook covers a wide range of topics related to solid-state batteries, including advanced enabling characterization techniques, fundamentals of solid-state systems, novel solid electrolyte systems, interfaces, cell-level studies, and three-dimensional architectures. It is directed at physicists, chemists, materials scientists, electrochemists, electrical engineers, battery technologists, and evaluators of present and future generations of power sources. This handbook serves as a reference text providing state-of-the-art reviews on solid-state battery technologies, as well as providing insights into likely future developments in the field. It is extensively annotated with comprehensive references useful to the student and practitioners in the field.

This volume is part of the two-volume proceedings of the 19th International Conf- ence on Artificial Neural Networks (ICANN 2009), which was held in Cyprus during September 14–17, 2009. The ICANN conference is an annual meeting sp- sored by the European Neural Network Society (ENNS), in cooperation with the - ternational Neural Network Society (INNS) and the Japanese Neural Network Society (JNNS). ICANN 2009 was technically sponsored by the IEEE Computational Intel- gence Society. This series of conferences has been held annually since 1991 in various European countries and covers the field of neurocomputing, learning systems and related areas. Artificial neural networks provide an information-processing structure inspired by biological nervous systems. They consist of a large number of highly interconnected processing elements, with the capability of learning by example. The field of artificial neural networks has evolved significantly in the last two decades, with active partici- tion from diverse fields, such as engineering, computer science, mathematics, artificial intelligence, system theory, biology, operations research, and neuroscience. Artificial neural networks have been widely applied for pattern recognition, control, optimization, image processing, classification, signal processing, etc.

A CMOS Self-Powered Front-End Architecture for Subcutaneous Event-Detector Devices presents the conception and prototype realization of a Self-Powered architecture for subcutaneous detector devices. The architecture is designed to work as a true/false (event detector) or threshold level alarm of some substances, ions, etc... that are detected through a three-electrodes amperometric BioSensor approach. The device is envisaged as a Low-Power subcutaneous implantable application powered by an inductive link, one emitter antenna at the external side of the skin and the receiver antenna under the skin. The sensor is controlled with a Potentiostat circuit and then, a post-processing unit detects the desired levels and activates the transmission via a backscattering method by the inductive link. All the instrumentation, except the power module, is implemented in the so called BioChip. Following the idea of the powering link to harvest energy of the magnetic induced link at the implanted device, a Multi-Harvesting Power Chip (MHPC) has been also designed.

Handbook Of Solid State Batteries (Second Edition)
Proceedings of the 25th Annual International Conference of the IEEE Engineering in Medicine and Biology Society
Minimally Invasive Surgery
Medical and Biological Microwave Sensors and Systems
Medical Robotics
Advances in Information and Communication

Index MedicusMedical Biosensors for Point of Care (POC) ApplicationsWoodhead Publishing

Medical Biosensors for Point of Care (POC) Applications discusses advances in this important and emerging field which has the potential to transform patient diagnosis and care. Part 1 covers the fundamentals of medical biosensors for point-of-care applications. Chapters in part 2 go on to look at materials and fabrication of medical biosensors while the next part looks at different technologies and operational techniques. The final set of chapters provide an overview of the current applications of this technology. Traditionally medical diagnostics have been dependent on sophisticated technologies which only trained professionals were able to operate. Recent research has focused on creating point-of-care diagnostic tools. These biosensors are miniaturised, portable, and are designed to be used at the point-of-care by untrained individuals, providing real-time and remote health monitoring. Provides essential knowledge for designers and manufacturers of biosensors for point-of-care applications Provides comprehensive coverage of the fundamentals, materials, technologies, and applications of medical biosensors for point-of-care applications Includes contributions from leading international researchers with extensive experience in developing medical biosensors Discusses advances in this important and emerging field which has the potential to transform patient diagnosis and care

Frontiers in Electronics

Ultra Low Power Capacitive Sensor Interfaces

XIV Mediterranean Conference on Medical and Biological Engineering and Computing 2016

A CMOS Self-Powered Front-End Architecture for Subcutaneous Event-Detector Devices

Privileged Structures in Drug Discovery

19th International Conference, Limassol, Cyprus, September 14-17, 2009, Proceedings