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Highlights

Electrical & Electronics Engineering Catalogue 2024

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Other Catalogues

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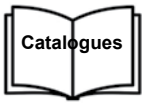

- Asian Studies
- Business and Management
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- Economics and Finance
- Life Sciences
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Electrical & Electronics Engineering

CONTENTS

Circuits, Electronics and Semiconductors

FLEXIBLE SENSORS

Materials, Devices and Applications

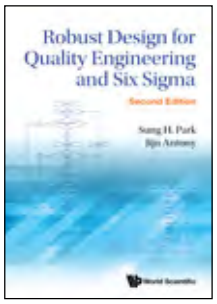
edited by **Guozhen Shen** *(Beijing Institute of Technology, China)* & **Yang Li** *(University of Jinan, China)*

This comprehensive volume systematically presents the research progress of flexible sensors in materials, devices, and applications. Contributed by renowned researchers, the compendium summarizes these high-density research works within the last decades and provides necessary sources of information for future research works on flexible sensors around the world.

Readership: Researchers, professionals, academics, undergraduate and graduate students in electrical & electronic engineering, materials engineering and microelectronics.

400pp	**May 2024**	
978-981-126-685-0	**US$138**	**£120**
978-981-126-686-7(ebook)	**US$221**	**£195**

ROBUST DESIGN FOR QUALITY ENGINEERING AND SIX SIGMA



2nd Edition

by **Sung H Park** *(Seoul National University, Korea)* & **Jiju Antony** *(Khalifa University, United Arab Emirates)*

Reviews of the First Edition:

"This book is well organized and delivered in a way easy for readers to understand. I am impressed with the logicality and the forthright expression that the authors used in writing the book ... It is also valuable for students, managers, and professionals interested in Taguchi's robust design methods, as well as the implementation of Six Sigma."

Assembly Automation, Industrial Robot, Sensor Review

This unique compendium combines robust design and Six Sigma to create synergistic effects for quality management practice. 2. It shows the roles of robust design for implementation of Six Sigma in practice. 3. The volume also highlights how robust design, Six Sigma and quality management in general should be transformed to satisfy customers in the 4th industrial revolution era. Finally, the book offers ten commandments on Design for Six Sigma which are essentially useful and practical guidelines aimed for senior managers in organizations for implementing Design for Six Sigma.

Readership: Researchers, professionals, academics, undergraduate and graduate students in industrial engineering and operations management.

660pp	**Mar 2024**	
978-981-125-522-9	**US$168**	**£135**
978-981-125-523-6(ebook)	**US$269**	**£215**

TRIBO-ELECTROSTATICS

Fundamentals, Challenges and Perspectives

by **Lucian Dascalescu** *(University of Poitiers, France)*, **Mihai Lungu** *(West University of Timisoara, Romania)* & **Thami Zeghloul** *(University of Poitiers, France)*

Such a text-book could also be of use to the engineers that need a better understanding of the physics behind the various useful or hazardous aspects of tribo-electrostatics, as well as to those who teach physics at high-school or university college level

Readership: Advanced undergraduate and graduate students in Applied Physics and Engineering, researchers and practitioners in the fields of electrostatic processes and tribology, teachers of general physics at high-school or college level.

200pp	**Dec 2023**	
978-981-123-602-0	**US$88**	**£75**
978-981-123-603-7(ebook)	**US$141**	**£115**

Advanced Series in Electrical and Computer Engineering - Vol 19

INTRODUCTION TO ELECTRONIC CIRCUITS

A Design-Oriented Approach

by **Jose Silva-Martinez** *(Texas A & M University, USA)* & **Marvin Onabajo** *(Northeastern University, USA)*

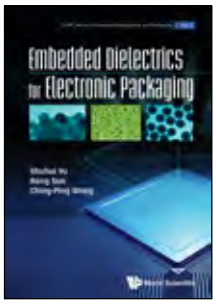
This book provides a compact and practical presentation of microelectronics circuits for a one-semester introductory course. Contrary to textbooks that are written for comprehensive two-semester electronics courses, the focus of this book is on the basic concepts and immediate discussion of application examples to instill more interest.

Readership: Researchers, academics, professionals, graduate and undergraduate students in electrical & electronic engineering and computer engineering.

350pp	**Feb 2024**	
978-981-4678-52-0(pbk)	**US$58**	**£48**
978-981-4656-88-7	**US$120**	**£100**

WSPC Series in Advanced Integration and Packaging

EMBEDDED DIELECTRICS FOR ELECTRONIC PACKAGING



by **Shuhui Yu** *(Shenzhen Institutes of Advanced Technology, China & Chinese Academy of Sciences, China)*, **Rong Sun** *(Shenzhen Institutes of Advanced Technology, China & Chinese Academy of Sciences, China)* & **Ching-Ping Wong** *(The Chinese University of Hong Kong, Hong Kong & Georgia Institute of Technology, USA)*

This book for the first time introduces the design of the synthesizing methods of ceramic-metal hybrid particles used as dielectric filler in the polymer matrix. Focuses on the dielectric composites for embedded capacitor applications, instead of covering broad contents

Readership: Graduate students and researchers in electronic packaging, engineers dealing with reliability of microelectronics and computer systems, as well as short courses given at microelectronics / computer manufacturing companies and conferences.

300pp	**Mar 2024**	
978-981-4619-41-7	**US$138**	**£115**
978-981-4619-42-4(ebook)	**US$221**	**£175**

FROM COMPLEX ANALYSIS TO METASCIENCE

A Stroll Around Boundary Behavior, Similarity and Duality

by **Hongyu Li** *(Sanmenxia Suda New Energy Research Institute, China)*, **Wenbin Li** *(Sanmenxia Suda New Energy Research Institute, China)* & **Shigeru Kanemitsu** *(Shandong University, China)*

This book covers complex analysis (the study of boundary behaviors of analytic functions) and its applications with engineering problems, especially control theory from the viewpoint of boundary functions. The metascience part is rather unique and illustrates a metascientific way of thinking engineering problems by examples of batteries which are cores of electric vehicles.

Readership: Researchers and postgraduate students who want to learn practical knowledge for decision-making by concrete practical examples, e.g., through deep understanding of electromechanism and make decisive improvements; and who want to know about a new paradigm and scientific basics of electric double-layer supercapacitor, secondary batteries and electric vehicles. Engineers working with batteries and electricity storage device.

260pp	**Nov 2023**	
978-981-127-211-0	**US$88**	**£75**
978-981-127-212-7(ebook)	**US$141**	**£125**

BIT RATE ADAPTATION IN DIGITAL COMMUNICATION OVER FADING CHANNELS

by **Roman E Goot**

In this unique compendium, the general principal of adaptation and its application in communications, especially for bit rate adaptation are considered. Two type of bit rate adaptation are treated — signal duration and size constellation. When a channel state is relatively good, size constellation adaptation should be used. With state degradation, signal duration is used.

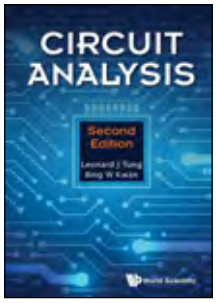
Readership: Researchers, professionals.

250pp	**Jan 2024**	
978-981-120-299-5	**US$108**	**£95**
978-981-120-300-8(ebook)	**US$173**	**£140**

CIRCUIT ANALYSIS

2nd Edition

by **Leonard J Tung** & **Bing W Kwan**
(Florida State University, USA)



This unique compendium gives a complete, concise and rigorous treatment of virtually all the essential topics typically included in most textbooks for undergraduate students majoring in electrical and computer engineering. These topics include basic circuit elements, fundamental circuit laws, theorems and efficient analysis techniques to solve a large class of linear circuits energized by a wide scope of electrical sources.

Readership: Undergraduates in electrical & electronic engineering and computer engineering.

300pp	**Dec 2023**	
978-981-3277-15-1	**US$78**	**£70**
978-981-3277-16-8(ebook)	**US$125**	**£100**

WSPC Series in Advanced Integration and Packaging

CO-DESIGN AND MODELLING FOR ADVANCED INTEGRATION AND PACKAGING

Manufacturing and Reliability

by **Christopher Bailey** *(University of Greenwich, UK)*, **Stoyan Stoyanov** *(University of Greenwich, UK)* & **Hua Lu** *(University of Greenwich, UK)*

The aim of this book is to provide readers with an in-depth understanding of current state-of-the-art in the use of co-design and modeling tools to predict reliability and robustness of advanced packaging and integration technologies for both micro and power electronic systems. Authored by world leading experts in the field the of multiphysics/multi-domain modeling, the book starts with an overview of advanced packaging and integration technologies which details the manufacturing and reliability challenges that need to be addressed in the development of, for example, 3D-IC, novel bumping technologies such a copper column, lead-free solders and nano-sintering, and packaging technologies such as wafer level packaging. The book then progresses to discuss state-of-the-art modeling tools and techniques and the evolving progression towards co-design, and multi-domain analysis to ensure reliability and robustness. Finally a number of chapters demonstrate the application of these modeling methodologies and toolsets to advanced packaging and integration technologies.

Readership: Graduate students, researchers professionals, and electrical and mechanical engineers in advanced packaging of micro and power electronic systems, design and modelling community.

300pp	**Mar 2024**	
978-981-4740-20-3	**US$138**	**£115**
978-981-4740-21-0(ebook)	**US$221**	**£175**

ELECTRICAL AND GEOMETRICAL PROPERTIES OF ORGANIC MONOLAYERS

by **Mitsumasa Iwamoto** *(Tokyo Institute of Technology, Japan)*, **Tetsuya Yamamoto** *(Tokyo Institute of Technology, Japan)* & **Zhong-Can Ou-Yang** *(Chinese Academy of Science, China)*

This book addresses the physical mechanisms involved in the characteristic electrical properties and the geometrical structures that are observed from dipolar monolayers composed of organic molecules by using dielectric physics, electrostatics, the physics of liquid crystal, and soft matter physics. The orientational order parameters, introduced to quantify the orientational structures of monolayers, guide us towards this goal.

Readership: This book would be useful for physicists, chemists and electronic engineers of the field to understand their experimental results and to develop new theories.

250pp	**Feb 2024**	
978-981-4602-97-6	**US$106**	**£88**
978-981-4602-98-3(ebook)	**US$170**	**£135**

GUIDE TO CHARACTERISTICS AND CHARACTERIZATION OF SEMICONDUCTOR SURFACES

by **Jerzy Ruzyllo** *(Penn State University, USA)*

This comprehensive compendium explores aspects of semiconductor surface characteristics and characterization from the perspective of applied semiconductor device research and process development, rather than an in-depth coverage of surface science related issues. It provides guidance to the features of semiconductor surfaces affecting performance of the practical semiconductor devices, as well as selection of methods used to characterize those features.

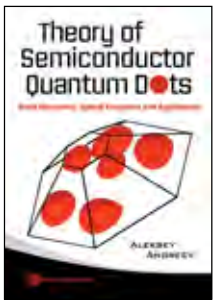
Readership: Researchers, professionals, academics, and graduate students in electrical & electronic engineering, microelectronics and semiconductors.

220pp	**Feb 2024**	
978-981-125-481-9	**US$88**	**£70**
978-981-125-482-6(ebook)	**US$141**	**£115**

THEORY OF SEMICONDUCTOR QUANTUM DOTS

Band Structure, Optical Properties and Applications

edited by **Aleksey Andreev** *(Hitachi Cambridge Laboratory, UK)*



Semiconductor structures containing zero-dimensional objects — quantum dots — are the subject of intensive research worldwide. This monograph describes a detailed theory of the electronic band structure and optical properties of semiconductor quantum dots. The author provides a comprehensive description of an original approach based on a combination of the Fourier transform, the Green's function and plane-wave expansion techniques in the framework of multiband 8x8 kp theory. The calculated band structure, optical properties and device applications are analyzed in line with available experiments for a large number of realistic quantum dot structures and various combinations of materials, such as InGaN, GaN/AlN, ZnSe, InGaAs (including dots-in-the-well), ZnSe/CdSe, and lead salts.

Readership: Researchers in the area of semiconductor dots and nanocrystals, including fundamental research and applications, experiment and theory, and students and researchers in physics and electrical engineering, including biological and medical application areas. Some chapters are suitable for postgraduate courses.

400pp	**Feb 2024**	
978-981-256-881-6	**US$160**	**£133**
978-981-283-534-5(ebook)	**US$256**	**£205**

FUNDAMENTALS OF ELECTRIC CIRCUITS AND TRANSMISSION LINES

by **Hiroshi Toki** *(Osaka University, Japan)* & **Masayuki Abe** *(Osaka University, Japan)*

This unique compendium consists of two parts - electric circuit and fundamentals of transmission theory. The first part contains all the necessary materials to understand electric circuit and emphasizes on numerical method and calculation using Python program. The crucial second part starts with Maxwell equations to treat the electromagnetic phenomena of conducting materials and derives the Heaviside equation for transmission theory in distributed-parameter circuit. Boundary condition of the lumped and distributed circuits are introduced. The boundary condition enables readers to understand the source of electric noise from circuit.

Readership: Researchers, professionals, academics, undergraduate and graduate students in circuits and systems.

250pp	**Sep 2023**	
978-981-126-542-6	**US$88**	**£75**
978-981-126-543-3(ebook)	**US$141**	**£125**

A NEW PERSPECTIVE AND A FOUNDATION ON TOPOLOGICAL NANODEVICES

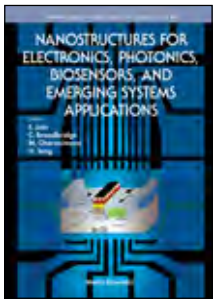
by **Felix A Buot** *(University of SanCarlos Nasipit, Philippines)*

This book employs nonequilibrium quantum transport, based on the use of mixed Hilbert space representations and real time quantum superfield transport theory, to explain various topological phases of systems with entangled chiral degrees of freedom. It presents an entirely new perspective on topological systems, entanglement-induced localization and delocalization, integer quantum Hall effect (IQHE), fractional quantum Hall effect (FQHE), and its respective spectral zones in the Hofstadter butterfly spectrum. A simple and powerful, intuitive, and wide-ranging perspective on chiral transport dynamics..

Readership: Foundational tool for engineers and computational scientists working with topological nanodevices. Also relevant to graduates and research professionals in condensed matter physics.

350pp	**Nov 2023**	
978-981-126-471-9	**US$128**	**£115**
978-981-126-472-6(ebook)	**US$205**	**£180**

Selected Topics in Electronics and Systems - Vol 66



NANOSTRUCTURES FOR ELECTRONICS, PHOTONICS, BIOSENSORS AND EMERGING SYSTEMS APPLICATIONS

edited by **F Jain** *(University of Connecticut, USA)*, **C Broadbridge** *(Southern Connecticut State University, USA)*, **M Gherasimova** *(University of Bridgeport, USA)* & **H Tang** *(Yale University, USA)*

This unique edited compendium consists of peer-reviewed articles focusing on 2D materials-based nanoelectronics to nanophotonic devices for biosensors and bio-nano-systems. Wide-ranging topics span from novel systems for implementing data with security tokens, single chemical sensor for multi-analyte mixture detection, additively manufactured RF devices for communication, packaging, remote sensing, to energy harvesting applications. Quantum dot-based devices featuring optical modulators and mid-infrared photodetectors in the form of Ferroelectric and quantum dot non-volatile memories, 3D-confined quantum dot channel (QDC) and spatial wavefunction switched (SWS) FETs for high-speed multi-bit logic and novel system applications are also included.

Readership: Researchers, professionals, academics, and graduate students in electrical & electronics engineering, circuits & systems, microelectronics and nanoelectronics.

236pp	**Feb 2023**	
978-981-127-078-9	**US$98**	**£85**
978-981-127-079-6(ebook)	**US$157**	**£140**

VISIR HANDBOOK

Analog Electronics with the VISIR Remote Lab: Real Online Experiments

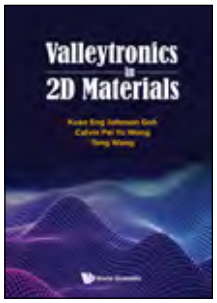
by **Unai Hernández-Jayo** *(University of Deusto, Spain)*, **Javier García-Zubía** *(University of Deusto, Spain)* & **Gustavo R Alves** *(Polytechnic of Porto, Portugal)*

VISIR Handbook acts as a reference guide for future users, demonstrating many of the real (remote) experiments that can be achieved and replicated with this laboratory. Most importantly, this book demonstrates how VISIR can be used in the classroom with students as a learning tool. The approach of the book is designed on two levels, with an administrator/researcher approach and a teacher/student approach.

Readership: This book is suitable for undergraduate students of Engineering, as well as graduate students and lecturers who would teach them. This book is also applicable to student and educators at technological schools and secondary schools with degrees related to technology.

295pp	**Sep 2023**	
978-981-127-414-5	**US$108**	**£95**
978-981-127-415-2(ebook)	**US$173**	**£150**

VALLEYTRONICS IN 2D MATERIALS



edited by **Kuan Eng Johnson Goh** *(A*STAR, Singapore)*, **Calvin Pei Yu Wong** *(A*STAR, Singapore)* & **Tong Wang** *(A*STAR, Singapore)*

"This is a timely book — the field of valleytronics is emerging and I have yet to see a book on this topic; and the field of 2D materials is just publishing its first books. Valleytronics in 2D Materials introduces the brief history of valleytronics, the valley physics of 2D semiconductors, and recent attempts to engineer valley devices for practical purposes. The field is still developing, and this book will provide a useful reference for researchers in the field."

Andrew Wee
Professor of Physics, National University of Singapore

Readership: Applied researchers, engineers, and postgraduate students working in the fields of valleytronics, 2D materials, solid-state chemistry and semiconductors. Might also be of interest to undergraduate students in Materials Science, Chemistry, Engineering, and Physics, as well as policy makers, market analysts, and general readers.

300pp	**Jul 2023**	
978-981-122-909-1	**US$138**	**£120**
978-981-122-910-7(ebook)	**US$221**	**£175**

LECTURES ON FUNCTIONAL ANALYSIS AND APPLICATIONS

2nd Edition

by **V S Pugachev** & **I N Sinitsyn** *(Russian Academy of Sciences, Russia)*

This second edition includes new and updated 300 examples and more than 500 problems to help readers understand and master the theories presented. In addition, necessary improvements for bringing the contents more up to date with current fundamental and applied developments in Chapters 1 – 10 were made. Now, Chapter 9 covers nonlinear and stochastic problems and Chapter 10, devoted to elements of numerical functional analysis, has been completely revised and broadened.

Readership: Undergraduate and graduate students as well as researchers in applied mathematics, and engineers.

800pp	**Aug 2023**	
978-981-3203-18-1(pbk)	**US$88**	**£73**
978-981-3203-17-4	**US$178**	**£148**

WORLD OF CHIPS

Roaming Integrated Circuit World

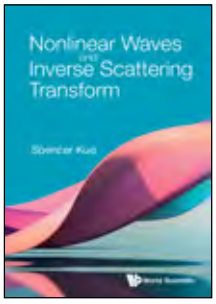
by **Shichang Zou** *(Chinese Academy of Sciences, China)*

The book is Zou Shichang's introduction of chips and integrated circuits to elementary students. It includes many talks, where Dr. Zou introduces to children common knowledge of chips and integrated circuits and the present situation of China's chip industry. With the great scientist's introduction of cutting-edge science and industry, this book is a rare-to-find popular science book for elementary students.

Readership: Students of all levels with interest in physics and applied/technical physics.

136pp	**Jul 2023**	
978-981-120-902-4	**US$48**	**£40**
978-981-120-903-1(ebook)	**US$98**	**£80**

NONLINEAR WAVES AND INVERSE SCATTERING TRANSFORM



by **Spencer Kuo** *(New York University, USA)*

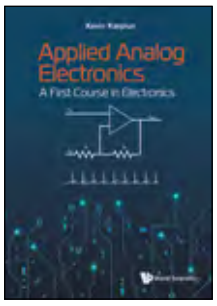
Nonlinear waves are essential phenomena in scientific and engineering disciplines. The features of nonlinear waves are usually described by solutions to nonlinear partial differential equations, which are fundamental to students and researchers.

This book provides students, who are familiar with nonlinear waves, methods for solving nonlinear partial differential equations, enabling them to expand their studies into other related areas. The selection of topics and the focus given to each provide essential materials for a lecturer to cover the bases in a nonlinear wave course.

Readership: Graduate and senior graduate courses on nonlinear waves, also relevant as a reference book for researchers, research labs and academic institutes.

200pp	**Jul 2023**	
978-1-80061-403-1	**US$78**	**£70**
978-1-80061-404-8(ebook)	**US$125**	**£110**

APPLIED ANALOG ELECTRONICS



A First Course in Electronics

by **Kevin Karplus** *(University of California, Santa Cruz, USA)*

This textbook is for a first course on electronics. It assumes no prior electronics experience, but does assume that students have had calculus 1 (single-variable differential calculus) and high-school physics.

A key idea of the course is that students need a lot of design experience and hands-on work, rather than a lot of theory. The course is centered around the labs, which are a mix of design labs and measurement/modeling labs.

This unique volume takes students from knowing no electronics to being able to design and build amplifier and filter circuits for connecting sensors to microcontrollers within 20 weeks. Students design a digital thermometer, a blood-pressure meter, an optical pulse monitor, an EKG, an audio preamplifier, and a class-D power amplifier. They also learn how to measure and characterize components, including impedance spectroscopy of a loudspeaker and of electrochemical electrodes.

Readership: Researchers, professionals, academics, undergraduate and graduate students in electrical & electronic engineering, and circuits and systems.

700pp	**May 2023**	
978-981-125-496-3(pbk)	**US$88**	**£70**
978-981-125-441-3	**US$178**	**£140**
978-981-125-442-0(ebook)	**US$285**	**£230**

MODELING AND PARAMETER EXTRACTION TECHNIQUES OF SILICON-BASED RADIO FREQUENCY DEVICES

by **Ao Zhang** *(Nantong University, China)* & **Jianjun Gao** *(East China Normal University, China)*

This comprehensive compendium describes the basic modeling techniques for silicon-based semiconductor devices, introduces the basic concepts of silicon-based passive and active devices, and provides its state-of-the-art modeling and equivalent circuit parameter extraction methods.

Readership: Researchers, professionals, academics, graduate and undergraduate students in electrical and electronic engineering.

324pp	**Apr 2023**	
978-981-125-535-9	**US$128**	**£100**
978-981-125-536-6(ebook)	**US$205**	**£165**

Materials and Energy - Vol 12

WORLD SCIENTIFIC HANDBOOK OF ORGANIC OPTOELECTRONIC DEVICES

(Volumes 3 & 4)

Volume 3: OLEDs

Volume 4: Flexible Bioelectronics

edited by **Dongge Ma** *(South China University of Technology, China)* & **Tae-Woo Lee** *(Seoul National University, South Korea)*

Editor-in-chief: **Franky So** *(North Carolina State University, USA)*

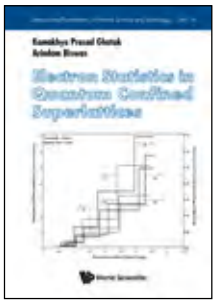
World Scientific Handbook of Organic Optoelectronic Devices provides a comprehensive coverage of the state-of-the-art in an accessible format. It presents the most widely recognized fundamentals, principles, and mechanisms along with representative examples, key experimental data, and over 200 illustrative figures.

Readership: Advanced graduate students and researchers in the field of electrical and electronic engineering specifically in polymers, semiconductors and related areas.

1144pp	**Jul 2022**	
978-981-124-029-4(Set)	**US$890**	**£785**
978-981-124-030-0(Set)(ebook)	**US$1424**	**£1255**

Series on the Foundations of Natural Science and Technology

ELECTRON STATISTICS IN QUANTUM CONFINED SUPERLATTICES



by **Kamakhya Prasad Ghatak** *(University of Engineering and Management, India)* & **Arindam Biswas** *(Kazi Nazrul University, India)*

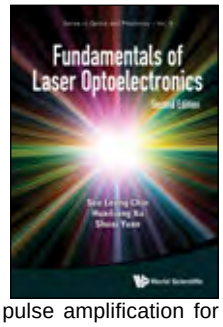
This book contains hundred open research problems which form the integral part of the text and are useful for both PhD aspirants and researchers. It is written for post graduate students of various departments of different academic organizations, engineers and professionals in the fields of solid state electronics, materials science, solid state sciences, nano-science, nanotechnology and nano materials in general.

Readership: Suitable for graduate courses on materials science, condensed matter physics, nano-science and technology and solid-state sciences and devices in many Universities and Institutions in addition to both PhD students and researchers in the aforementioned fields.

792pp	**Apr 2023**	
978-981-126-365-1	**US$198**	**£175**
978-981-126-366-8(ebook)	**US$317**	**£280**

Series in Optics and Photonics - Vol 9

FUNDAMENTALS OF LASER OPTOELECTRONICS (2nd Edition)



by **See Leang Chin** *(Université Laval, Canada)*, **Huailiang Xu** *(Jilin University, China)* & **Shuai Yuan** *(University of Shanghai for Science and Technology, China)*

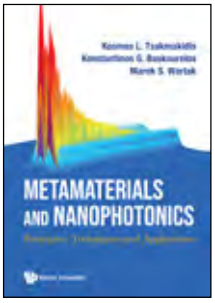
In this edition, recent research results on modern technologies and instruments relevant to laser optoelectronics have been added to each chapter. New material include: chirped pulse amplification for petawatt lasers; optical anisotropy; physical explanations for group velocity dispersion, group delay dispersion, and third order dispersion; an introduction of different types of laser systems; and both optical isotropy and anisotropy in different types of harmonic generation.

Readership: Undergraduate physics, engineering physics and electrical engineering courses devoted to laser optoelectronics. Graduated students and scientists working in the fields of physics, engineering physics and electrical engineering researching on laser optoelectronics may also benefit from the book.

364pp	**Sep 2022**	
978-981-125-498-7(pbk)	**US$58**	**£45**
978-981-125-475-8	**US$118**	**£105**
978-981-125-476-5(ebook)	**US$189**	**£165**

METAMATERIALS AND NANOPHOTONICS

Principles, Techniques and Applications



by **Kosmas L Tsakmakidis** *(National and Kapodistrian University of Athens, Greece)*, **Konstantinos G Baskourelos** *(National and Kapodistrian University of Athens, Greece)* & **Marek S Wartak** *(Wilfrid Laurier Univ., Canada)*

The book is intended for final-year undergraduates, as well as postgraduates or active researchers who wish to understand and enter these fields in a 'user-friendly' manner, and who have a basic understanding of and familiarity with electromagnetic theory.

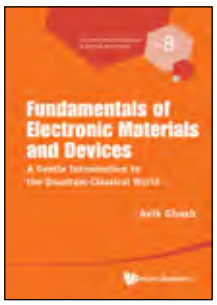
Readership: Graduate students, advanced undergraduate students, and active researchers in: nanoscale physics, nanophotonics, optics, condensed matter physics.

332pp	**Sep 2022**	
978-981-126-186-2	**US$128**	**£100**
978-981-126-187-9(ebook)	**US$205**	**£165**

Lessons from Nanoscience: A Lecture Notes Series - Vol 8

FUNDAMENTALS OF ELECTRONIC MATERIALS AND DEVICES

A Gentle Introduction to the Quantum-Classical World



by **Avik Ghosh** *(University of Virginia, USA)*

"... addresses the critical need to bring bottom-up quantum physics and top-down device engineering together. Students will find in this book a unique combination of clearly-presented fundamental science and the device engineering principles needed to advance electronics in the nanoscale era."

Mark Lundstrom
Don and Carol SciFres Distinguished Professor, Purdue University
Winner, IEEE Kirchmayer Graduate Teaching Award (2018)

Readership: Advanced undergraduates, graduates, researchers, and industry professionals in the following fields: condensed matter physics, nanoelectronics, semiconductor devices, nanomaterials, materials science, device physics, digital electronics.

348pp	**Feb 2023**	
978-981-126-657-7(pbk)	**US$38**	**£35**
978-981-126-595-2	**US$108**	**£95**
978-981-126-596-9(ebook)	**US$173**	**£150**

New Era Electronics: A Lecture Notes Series - Vol 1

TRANSISTORS!

by **Mark Lundstrom** *(Purdue University, USA)*

This volume rearranges the familiar topics and distills the most essential among them, while adding most recent approaches which have become crucial to the discussion. To follow the lectures, readers need only a basic understanding of semiconductor physics. Familiarity with transistors and electronic circuits is helpful, but not assumed.

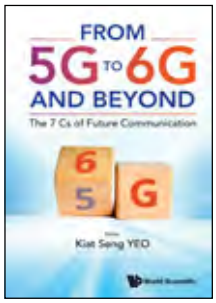
Readership: Advanced undergraduates and graduates in electronic engineering, semiconductors, microelectronics and nanoelectronics, as well as professional engineers.

280pp	**Jan 2023**	
978-981-126-768-0(pbk)	**US$58**	**£50**
978-981-126-726-0	**US$108**	**£95**
978-981-126-727-7(ebook)	**US$173**	**£150**

Communications and Signal Processing

FROM 5G TO 6G AND BEYOND

The 7 Cs of Future Communications



edited by **Kiat Seng Yeo** *(Singapore University of Technology and Design, Singapore)*

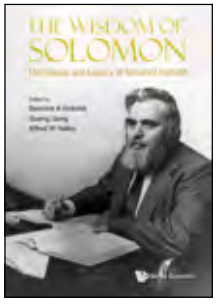
The book presents an RF/mm-wave integrated circuit design for future communications to provides readers with an easy-to-understand overview of voltage-controlled oscillators, power amplifiers, low-noise amplifiers, frequency synthesizers, high-frequency dividers, and chip-to-chip communications isolation technology.

Readership: Advanced undergraduate- and graduate-level students as well as faculty and researchers in electrical & electronic engineering, wireless communication, integrated circuit design and circuits & systems. This book can be used as an excellent reference for communication engineers working on 5G, 5G and beyond and even 6G, communication standards, RF/mm-wave IC designers, engineers, consultants, engineering managers and directors, instructors and scientists working in the foundry, fabless semiconductor company, original equipment manufacturer and integrated device manufacturer.

270pp	**May 2023**	
978-981-127-084-0	**US$98**	**£85**
978-981-127-085-7(ebook)	**US$157**	**£140**

THE WISDOM OF SOLOMON

The Genius and Legacy of Solomon Golomb



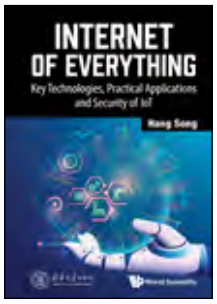
edited by **Beatrice A Golomb** *(University of California San Diego, USA)*, **Guang Gong** *(University of Waterloo, Canada)* & **Alfred W Hales** *(IDA Center for Communications Research, la Jolla, USA)*

Solomon Wolf Golomb left an unparalleled legacy of accomplishment and recognition for his work in the applications of mathematics to coding and communication theory. His legacy also includes a host of individuals whose lives and careers were immeasurably enriched by their interactions with him.

Readership: General.

400pp	**May 2023**	
978-981-123-436-1	**US$78**	**£70**
978-981-123-437-8(ebook)	**US$125**	**£100**

INTERNET OF EVERYTHING



Key Technologies, Practical Applications and Security of IoT

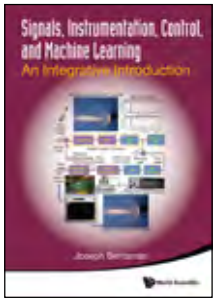
by **Hang Song** *(National University of Defence Technology, China)*

This book provides comprehensive coverage on the concepts, frameworks, and underpinning technologies in most aspects of the Internet of Things (IoT), and presents them as the foundation on which more advanced topics, such as 5G and mMTC/M2M, Edge/cloud computing and the modalities of Tactile IoT, Industrial IoT (IIoT)/Industry 4.0, Satellite IoT, and Digital Twins (DT), could be built upon.

Readership: The book focuses on bringing all IoT related technologies together, so that students, researchers, and practitioners could use this book as a reference guide in the course of their studies and product development process.

840pp	**Dec 2022**	
978-981-124-626-5	**US$268**	**£235**
978-981-124-627-2(ebook)	**US$429**	**£345**

SIGNALS, INSTRUMENTATION, CONTROL, AND MACHINE LEARNING



An Integrative Introduction

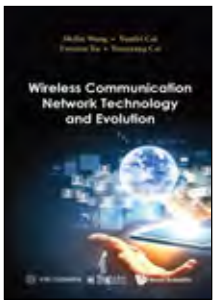
by **Joseph Bentsman** *(University of Illinois at Urbana-Champaign, USA)*

This book stems from a unique and a highly effective approach to introducing signal processing, instrumentation, diagnostics, filtering, control, system integration, and machine learning.

Readership: Researchers, professionals, academics, undergraduate and graduate students in mechanical engineering, electrical & electronic engineering, systems engineering and industrial engineering.

844pp	**Jul 2022**	
978-981-125-231-0(pbk)	**USUS$198**	**£175**
978-981-125-187-0(ebook)	**US$317**	**£280**

WIRELESS COMMUNICATION NETWORK TECHNOLOGY AND EVOLUTION

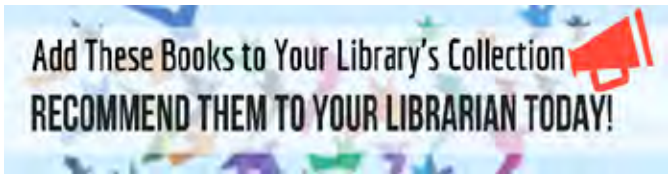


by **Shilin Wang** *(Nanjing Institute of Communication Engineering, China)*, **Yunfei Cai** *(Shenzhen TCL New Technology Co., Ltd, China)*, **Youyun Xu** *(Nanjing University of Posts & Telecommunications, China)* & **Yuanyang Cai** *(Purdue University Northwest, USA)*

This book provides a panoramic overview on wireless communication network technologies and its evolution, namely cellular mobile networks (especially 5G), Wireless Local Area Network (WLAN) and Narrow Band Internet of Things (NB-IoT).

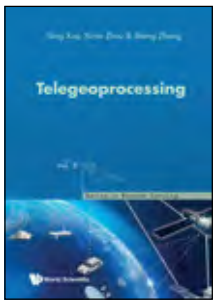
Readership: Researchers, professionals, academics and graduate students in communications, electronic engineering, and automatic control.

648pp	**Apr 2022**	
978-981-124-505-3	**US$168**	**£150**
978-981-124-506-0(ebook)	**US$269**	**£240**



Series in Remote Sensing - Vol 5

TELEGEOPROCESSING



by **Yong Xue** *(China University of Mining and Technology, China)*, **Xiran Zhou** *(China University of Mining and Technology, China)* & **Sheng Zhang** *(China University of Mining and Technology, China)*

This unique compendium brings together most of the key issues involved in research in novel systems in telegeoprocessing. It elucidates a comprehensive introduction to the problems encountered in telegeoprocessing engineering and the major technologies and standards related to designing an integrated, fully functional telegeoprocessing system based on the latest multimedia and telecommunication technologies.

Readership: Researchers, professionals, academics, and graduate students in environmental engineering and environmental management & planning.

348pp	**Feb 2023**	
978-981-126-217-3	**US$128**	**£100**
978-981-126-218-0(ebook)	**US$205**	**£165**

Topics in Advanced Geoinformatics - Vol 1

URBAN REMOTE SENSING

by **Zhenfeng Shao** *(Wuhan University, China)*

This compendium is based on more than ten years of urban remote sensing teaching experience, scientific research achievements, and the latest developments of remote sensing technology. The volume is divided into ten chapters, which describes the principles of urban remote sensing and multi-source remote sensing big data acquisition, urban remote sensing image processing methods, urban remote sensing image specific applications in related industries, and the prospect of urban remote sensing development.

Readership: Researchers, professionals, academics, undergraduate and graduate students in geology, earth studies and earth science.

256pp	**Feb 2023**	
978-981-126-616-4	**US$88**	**£75**
978-981-126-617-1(ebook)	**US$141**	**£125**

THE WORLD OF 5G

(In 5 Volumes)
Volume 1: Internet of Everything
Volume 2: Intelligent Manufacturing
Volume 3: Intelligent Home
Volume 4: Intelligent Transportation
Volume 5: Intelligent Medicine

by **Quan Xue** *(South China University of Technology, China)*, **Wenquan Che** *(South China University of Technology, China)*, **Jishun Guo** *(GAC Automotive R&D Center, China)*, **Wei Wu** *(Skyworth Group Co., Ltd, China)*, **Zhiqiang Xu** *(Guangzhou Hantele Communication Co. Ltd, China)*, **Wenhua Huang** *(Southern Medical University, China)* & **Haibin Lin** *(Affliated Hospital of Putian University, China)*

Editor-in-chief: **Quan Xue** *(South China University of Technology, China)*

The World of 5G series consists of five salient volumes — Internet of Everything, Intelligent Manufacturing, Intelligent Home, Intelligent Transportation, and Intelligent Medicine.

Readership: Researchers and practitioners in the fields of 5G. General readers who are interested in the fields of 5G, undergraduate students.

736pp	**May 2022**	
978-981-125-017-0(Set)	**US$320**	**£255**
978-981-125-018-7(Set)(ebook)	**US$512**	**£410**

SURROGATE MODELING FOR HIGH-FREQUENCY DESIGN

Recent Advances

edited by **Slawomir Koziel** *(Reykjavik University, Iceland)* & **Anna Pietrenko-Dabrowska** *(Gdansk University of Technology, Poland)*

"The book is abundant with real-world application case studies, including local and global optimization of antenna and microwave components, statistical analysis, tolerance-aware design, and more. Another appealing feature is the introductory chapters which elaborate on the fundamentals of data-driven and physics-based surrogate modeling."

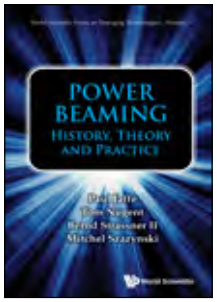
Stanisław Szczepaski
Gdansk University of Technology, Poland

Readership: Graduate students, researchers and designers in antenna engineering, microwave/RF engineering, microwave photonics, electrical engineering and mechanical engineering.

468pp	**Mar 2022**	
978-1-80061-074-3	**US$158**	**£125**
978-1-80061-075-0(ebook)	**US$253**	**£200**

World Scientific Series on Emerging Technologies: Avram Bar-Cohen Memorial Series

POWER BEAMING



History, Theory and Practice

by **Paul Jaffe** *(US Naval Research Laboratory, USA)*, **Tom Nugent** *(PowerLight Technologies, USA)*, **Bernd Strassner II** *(Sandia National Laboratories, USA)* & **Mitchel Szazynski** *(Bastian Solutions, USA)*

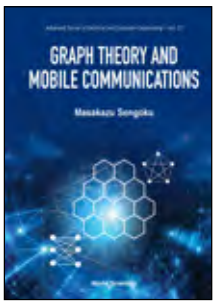
This comprehensive compendium provides the foundation needed for researchers, technology developers, and end users to understand the promise and challenges for power beaming. By establishing a common nomenclature and conceptual approach to the analysis and assessment of power beaming systems, this unique reference text provides a true status of advancements in the field, and lays the groundwork for fruitful future research and applications.

Readership: Professionals, researchers, academics and graduate students in electrical & electronic engineering.

320pp	**Nov 2023**	
978-981-124-310-3	**US$128**	**£115**
978-981-124-311-0(ebook)	**US$205**	**£165**

Advanced Series in Electrical and Computer Engineering - Vol 23

GRAPH THEORY AND MOBILE COMMUNICATIONS



by **Masakazu Sengoku** *(Graduate Institute for Entrepreneurial Studies, Japan)*

This comprehensive compendium discusses the basics of graph theory to its application, focusing on the application of graph theory to mobile communications.

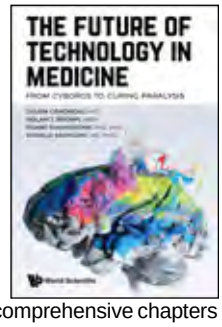
A mobile communication connects a mobile terminal and a base station wirelessly, and the base station enables communications all over the world via a wired and satellite communication system. This means that the mobile communication system includes wire and wireless technologies, and also hardware such as analog electric circuits, digital circuits and a software part such as computer algorithms. This useful reference text deeply studies how the network structure influences the performance of the corresponding system.

Readership: Researchers, professionals, academics, undergraduate and graduate students in circuits & systems, communications and electrical and electronic engineering.

408pp	**Feb 2023**	
978-981-125-529-8	**US$148**	**£130**
978-981-125-530-4(ebook)	**US$237**	**£210**

Control / Tech

THE FUTURE OF TECHNOLOGY IN MEDICINE



From Cyborgs to Curing Paralysis

by **Julian Gendreau** *(Johns Hopkins University, USA)*, **Nolan J Brown** *(University of California Irvine, USA)*, **Shane Shahrestani** *(University of Southern California, USA)* & **Ronald Sahyouni** *(University of California San Diego, USA)*

In this book, the authors discuss these technological advancements of healthcare in 14 comprehensive chapters specifically designed to be read and understood by any individual interested in learning more about technology in medicine.

Readership: Interested lay public, medical, life sciences and engineering students.

300pp	**Jun 2023**	
978-981-127-641-5(pbk)	**US$48**	**£40**
978-981-127-432-9	**US$98**	**£85**
978-981-127-433-6(ebook)	**US$157**	**£140**

MOTION CONTROL

Multi-Faceted Movement in Space, Time and Neurological Impairment

by **Yoram Baram** *(Technion — Israel Institute of Technology, Israel)*

"Following an exposition of systems and control theory foundations, Motion Control presents the author's work with medical collaborators on human gait problems; this includes a presentation of their virtual reality feedback device for gait stabilization, in particular for those suffering from Parkinson's Disease. Motion Control joins the author's preceding monograph, The Subcritical Brain, to make a valuable contribution to the scientific and clinical area of human cybernetics."

Peter E Caines, FRSC, Distinguished James McGill Professor Macdonald Chair in the Department of Electrical and Computer Engineering, McGill University

Readership: Graduate students and professors of control theory, applied mathematics, electrical engineering, aeronautical engineering, mechanical engineering, medicine, computer science, physics, biology, neurology, psychology, cognition, linguistics, zoology, neurologists, doctors, physical therapists, neuroscientists, mathematicians, physicists, computer scientists. Biologists, psychologists, linguists, zoologists.

350pp	**Jun 2023**	
978-981-126-957-8	**US$128**	**£115**
978-981-126-958-5(ebook)	**US$205**	**£180**

ROBOTICS

From Manipulator to Mobilebot

by **Zixing Cai** *(Central South University, China & ZIXING Academy of AI, China)*

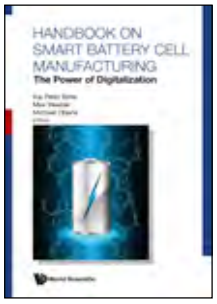
The book covers the core technology of robotics, including the basic theories and techniques of robot manipulator, mobile robots to focus on location navigation, and intelligent control underpinned by artificial intelligence and deep learning. Several case studies from national research projects in China are also included to help readers understand the theoretical foundations of robotics and related application developments.

Readership: Advanced undergraduate, graduate and post-grad researcher in the discipline/profession of robotics, automatic control, mechatronic engineering, intelligent S&T, computer science and engineering, electronic engineering, management and decision system engineering, and other related fields.

656pp	**Oct 2022**	
978-981-125-346-1	**US$178**	**£155**
978-981-125-347-8(ebook)	**US$285**	**£250**

Energy and the Environment

HANDBOOK ON SMART BATTERY CELL MANUFACTURING



The Power of Digitalization

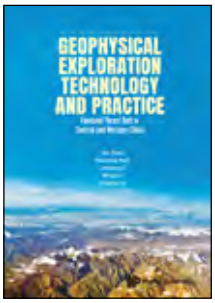
edited by **Kai Peter Birke** *(University of Stuttgart, Germany & Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Germany)*, **Max Weeber** *(Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Germany)* & **Michael Oberle** *(Fraunhofer Institute for Manufacturing Engineering and Automation (IPA), Germany)*

The *Handbook on Smart Battery Cell Manufacturing* provides a comprehensive and well-structured analysis of every aspect of the manufacturing process of smart battery cell, including upscaling battery cell production, accompanied by many instructive practical examples of the digitalization of battery products and manufacturing systems using an integrated life cycle perspective.

Readership: Industry Practitioners and Researchers specialising in Battery Cell Manufacturing; Advanced Undergraduate and Postgraduate Students in Electrical, Chemical and Mechanical Engineering and Research pertaining to Batteries.

488pp	**Jul 2022**	
978-981-124-561-9	**US$158**	**£125**
978-981-124-562-6(ebook)	**US$253**	**£200**

GEOPHYSICAL EXPLORATION TECHNOLOGY AND PRACTICE



Foreland Thrust Belt in Central and Western China

by **Wei Zhang**, **Nanchang Kang**, **Jianxiong Li**, **Mingjie Li** & **Shaohua Hu** *(China National Petroleum Corporation, China)*

The compendium summarizes the seismic exploration history, geophysical exploration technology progress, application and exploration results of foreland basins and foreland thrust belts in central and western China.

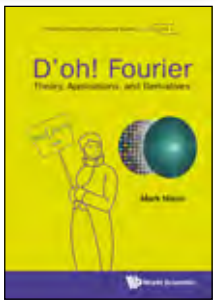
Readership: Researchers, professionals, academics, undergraduate and graduate students in industrial engineering, systems engineering and applied physics.

400pp	**Jul 2023**	
978-981-127-111-3	**US$138**	**£120**
978-981-127-112-0(ebook)	**US$221**	**£195**

Mathematical Applications

Primers in Electronics and Computer Science - Vol 5

D'OH! FOURIER



Theory, Applications, and Derivatives

by **Mark Nixon** *(University of Southampton, UK)*

D'oh! Fourier introduces the Fourier transform and is aimed at undergraduates in Computer Science, Mathematics, and Applied Sciences, as well as for those wishing to extend their education. Formulated around ten key points, this accessible book is light-hearted and illustrative, with many applications. The basis and deployment of the Fourier transform are covered applying real-world examples throughout inductively rather than the theoretical approach deductively.

Readership: Aimed at undergraduates with a mathematical background who cover Fourier as part of their undergraduate curriculum.

304pp	**Apr 2022**	
978-1-80061-119-1(pbk)	**US$58**	**£38**
978-1-80061-110-8	**US$98**	**£80**
978-1-80061-111-5(ebook)	**US$157**	**£130**

2D COMPUTER VISION

Principles, Algorithms and Applications

by **Yu-Jin Zhang** *(Tsinghua University, China)*

This special compendium introduces the basic principles, typical methods and practical techniques of 2D computer vision. The volume comprehensively covers the introductory content of computer vision and the materials are selected based on courses conducted in the past 20 years.

Readership: Researchers, professionals, academics, undergraduate and graduate students in pattern recognition, machine perception and electrical & electronic engineering.

556pp	**Mar 2022**	
978-981-124-508-4	**US$138**	**£110**
978-981-124-509-1(ebook)	**US$221**	**£175**

General

Essential Textbooks in Physics

HOW TO DERIVE A FORMULA

Volume 2: Further Analytical Skills and Methods for Physical Scientists

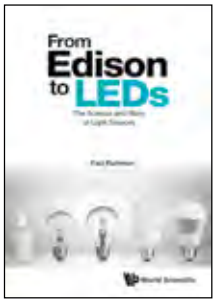
by **Alexei A Kornyshev** *(Imperial College London, UK)* & **Dominic O'Lee**

This two-volume book *How to Derive a Formula* is an attempt to engage these learners, presenting mathematical methods in as simple as possible terms, with more of an emphasis on skills as opposed to technical knowledge. Based on intuition and common sense rather than mathematical rigor, it teaches students from scratch using pertinent examples, many taken across the physical sciences to demonstrate the application of the taught methods.

Readership: Undergraduate and graduate students (in any disciplines of exact sciences), and postdoctoral researchers in physical sciences, university lecturers for teaching the material of some of the chapters of the book.

750pp	**May 2023**	
978-1-80061-297-6(pbk)	**US$98**	**£80**
978-1-80061-279-2	**US$168**	**£135**
978-1-80061-280-8(ebook)	**US$269**	**£215**

FROM EDISON TO LEDS



The Science and Story of Light Sources

by **Faiz Rahman** *(Ohio University, USA)*

This book attempts to describe the stories and technologies related to many light sources — some common, some less so. Described in a more-or-less chronological fashion, the book looks at developments from Edison and Swan's invention of the incandescent lamp, through lasers, to LEDs, and more. While the main focus is on sources of visible light, a number of devices that produce invisible radiation are also covered for the sake of completeness.

Readership: Undergraduate/graduate students and faculty of Physics, Electrical Engineering, Civil Engineering, and Built Environment, Illumination engineers. Lighting designers, Optical and photonic scientists and engineers involved with product design and manufacturing in consumer and industrial sectors as well as in defense and semiconductor industries.

400pp	**May 2023**	
978-981-126-827-4(pbk)	**US$48**	**£40**
978-981-126-758-1	**US$98**	**£85**
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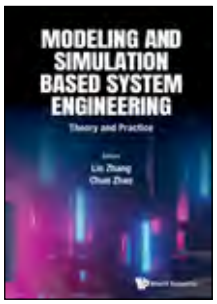

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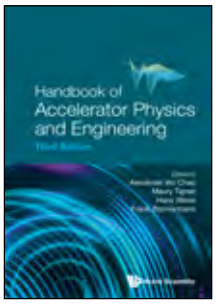

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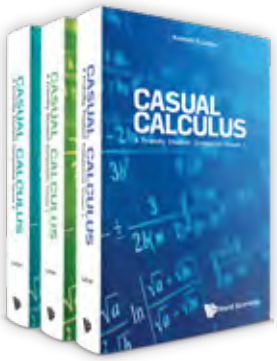

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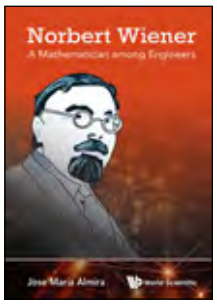

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Professor Emeritus
Department of Mathematics, Technion

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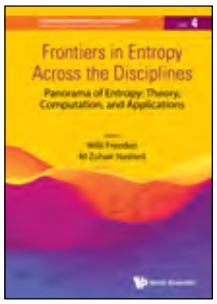

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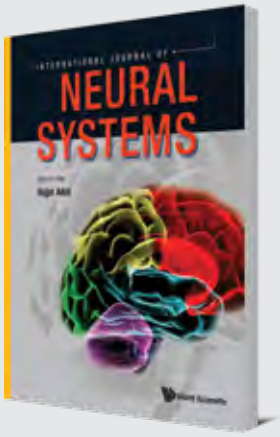

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The International Journal of Neural Systems is a bimonthly peer-reviewed journal which covers information processing in natural and artificial neural systems. The journal presents a fresh, undogmatic attitude towards this multi-disciplinary field, aiming to be a forum for novel ideas and improved understanding of collective and cooperative phenomena in systems with computational capabilities.

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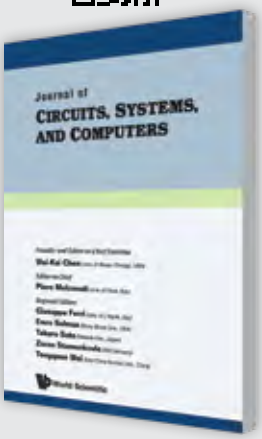

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Journal of Circuits, Systems and Computers is published eight times a year, and covers a wide scope, ranging from mathematical foundations to practical engineering design in the general areas of circuits, systems, and computers. Although primary emphasis will be on research papers, survey, expository and tutorial papers are also welcome.

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Editor-in-Chief: Eddie Cheng *(Oakland University, USA)*

The *Journal of Interconnection Networks (JOIN)* is an international scientific journal dedicated to advancing the state-of-the-art of interconnection networks. The journal addresses all aspects of interconnection networks including their theory, analysis, design, implementation and application, and corresponding issues of communication, computing and function arising from (or applied to) a variety of multifaceted networks. Interconnection problems occur at different levels in the hardware and software design of communicating entities in integrated circuits, multiprocessors, multicomputers, and communication networks as diverse as telephone systems, cable network systems, computer networks, mobile communication networks, satellite network systems, the Internet and biological systems.

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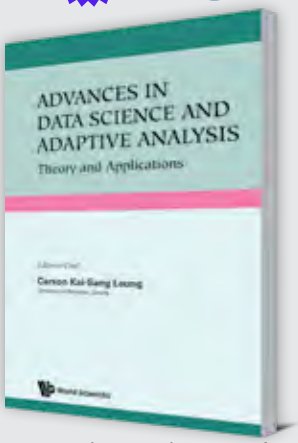

Advances in Data Science and Adaptive Analysis (ADSAA) is an interdisciplinary journal dedicated to report original research results on data analysis methodology developments and their applications, with a special emphasis on the adaptive approaches. The mission of the journal is to elevate data analysis from the routine data processing by traditional tools to a new scientific level, which encourages innovative methods development for data science and its scientific research and engineering applications.

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GUIDANCE, NAVIGATION AND CONTROL (GNC)

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Editors-in-Chief: Haibin Duan & **Yingxun Wang** *(Beihang University, China)*

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INTERNATIONAL JOURNAL OF HUMANOID ROBOTICS (IJHR)

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***IMPACT FACTOR: 1.5**

Editors-in-Chief
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Juyang (John) Weng *(Michigan State University, USA)* &
Giulio Sandini *(Italian Institute of Technology, Italy)*

The *International Journal of Humanoid Robotics* (IJHR) covers all subjects on the mind and body of humanoid robots. It is dedicated to advancing new theories, new techniques, and new implementations contributing to the successful achievement of future robots which not only imitate human beings, but also serve human beings. While IJHR encourages the contribution of original papers which are solidly grounded on proven theories or experimental procedures, the journal also encourages the contribution of innovative papers which venture into the new, frontier areas in robotics.

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JOURNAL OF MEDICAL ROBOTICS RESEARCH (JMRR)

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UNMANNED SYSTEMS (US)

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Unmanned Systems (US) aims to cover all subjects related to the development of automatic machine systems, which include advanced technologies in unmanned hardware platforms (aerial, ground, underwater and unconventional platforms), unmanned software systems, energy systems, modeling and control, communications systems, computer vision systems, sensing and information processing, navigation and path planning, computing, information fusion, multi-agent systems, mission management, machine intelligence, artificial intelligence, and innovative application case studies.

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WORLD SCIENTIFIC ANNUAL REVIEW OF ARTIFICIAL INTELLIGENCE

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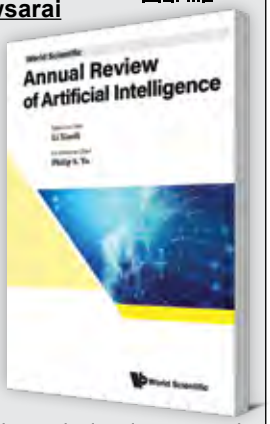

In recent years, Artificial Intelligence has become part of almost every aspect of innovation, ranging from medical research to Internet Of Things (IoT), its development from rule-based systems to deep learning has redefined research and development in many ways. To properly document the landmark development in Artificial Intelligence, this Annual Review aims to invite pioneers and experts in the fourth front of AI research to document and keeps audience updated on the story of this remarkable journey from Chess playing program in the 1950s to today underpinning a spectrum breath-taking innovations. On the other hand, this Annual Review of Artificial Intelligence also plans to serve as a forum for researchers and scientists alike to share their research results and exchange notes on future directions of Artificial Intelligence; topics include, but not limited to: deep learning, advanced machine learning, computer vision, natural language processing, reasoning, planning, cognitive sciences etc.

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Editors-in-Chief: Tung-Wu Lu (*National Taiwan University, Taiwan)*, **John K-J. Li** (*Rutgers University, USA)* & **Li-Shan Chou** (*Iowa State University, USA)*

The *World Scientific Annual Review of Biomechanics* (WSARB) provides a forum for focused reviews on specific topics, recent advances, historical perspectives, brief reviews and controversies. Contributions from the scientific, research, clinical and product development communities of those interested in Biomechanics are welcome.

The *World Scientific Annual Review of Biomechanics* covers biomechanics of all levels of biological systems, from cells, tissues, organs to systems, such as cardiovascular and respiratory, neural, muscular and skeletal systems, and from fundamental mechanisms to translational and clinical applications such as biofluids, orthopedics, prosthesis and implants, rehabilitation, prosthetics and orthotics, sports injuries and performance, and medical devices. Theoretical, modeling and experimental methodologies are included.

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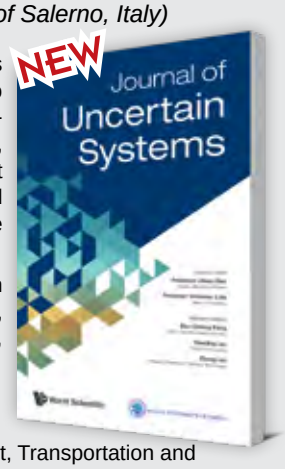
JOURNAL OF UNCERTAIN SYSTEMS

https://www.worldscientific.com/jus

Editors-in-Chief: Jinwu Gao *(Ocean University of China, China)* & **Vicenzo Loia** *(University of Salerno, Italy)*



Journal of Uncertain Systems (JUS) aims to publish original research related to uncertain systems with mathematical descriptions and applications in engineering, economics, finance, and management sciences. Some typical topics covered by JUS include but are not limited to the following four topics:

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SMART MANUFACTURING

https://www.worldscientific.com/sm

Editor-in-Chief: Kun Zhou *(Nanyang Technological University, Singapore)*

Smart Manufacturing is a peer-reviewed journal that provides academia and industry with high-quality research papers and reviews on advanced intelligent manufacturing. This journal aims to boost the integration of advanced manufacturing systems and digital information for high production efficiency, adaptability, and sustainability, using cutting-edge technologies in digital manufacturing, automated and robotic systems, artificial intelligence, online monitoring, cyber-physical systems, big data, Internet of Things (IoT), cloud computing, sociotechnology, etc.

Smart Manufacturing focuses on state-of-the-art manufacturing and its integration with enabling technologies in the implementation of intelligent manufacturing. The journal covers a broad scope, comprising smart and functional materials (material development), smart design (structure design and optimization), smart manufacturing (advanced manufacturing process development, digital twin, etc.), and smart factories (supply chain). Topics of particular interest include, but are not limited to, (1) 3D/4D printing, (2) digital manufacturing, (3) nature-inspired materials and manufacturing, (4) micro-/nanomaterials and manufacturing, (5) IoT for manufacturing, (6) cyber security for manufacturing, (7) adaptive and reconfigurable manufacturing, (8) green and sustainable materials and manufacturing, and (9) design methodologies for smart and functional materials and manufacturing.

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SPACECRAFT AND SATELLITES

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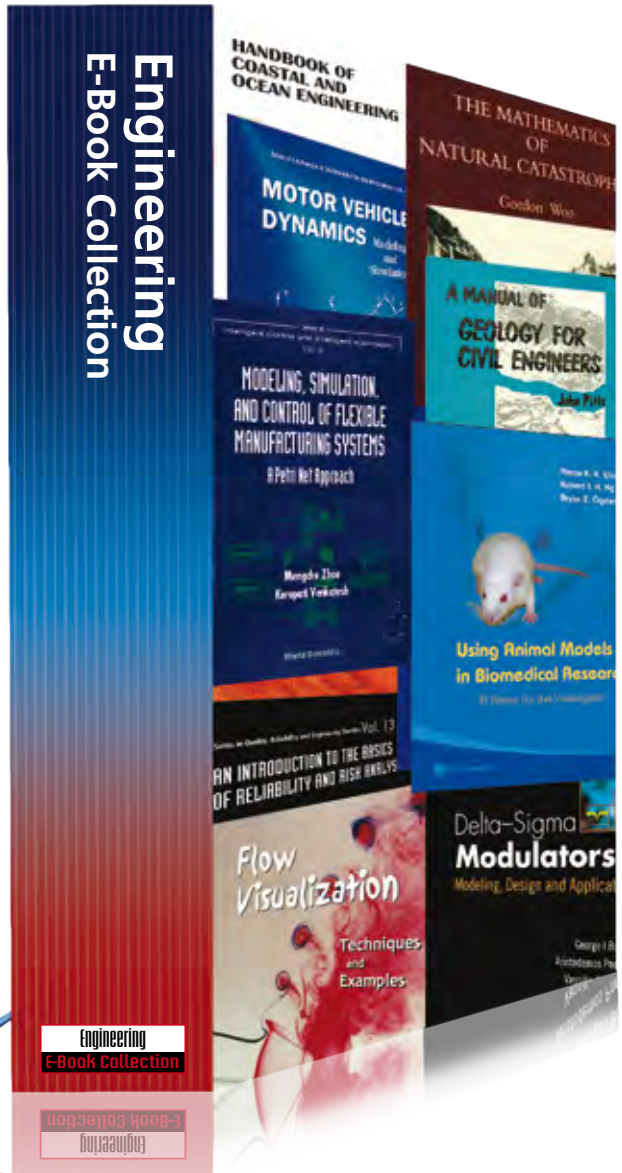

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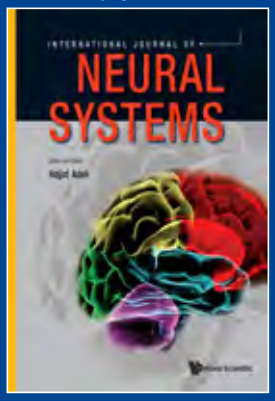

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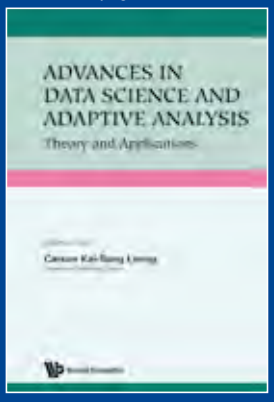

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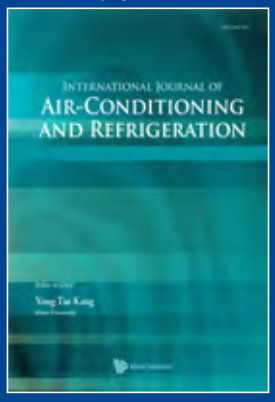

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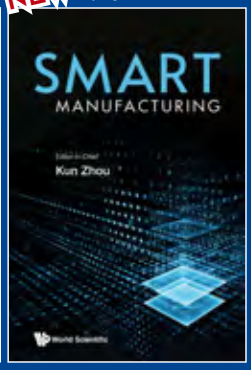

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