

# IET Books and eBooks Catalogue 2018



# Welcome to IET Books and eBooks 2018

The Institution of Engineering and Technology (IET) is a specialist publisher for the global engineering and technology community and offers a comprehensive selection of print and eBook titles across a range of disciplines.

We provide international researchers, professionals and students with new perspectives and developments in emerging subject areas, including healthcare technologies and cyber security, as well as forward-looking publications in traditional engineering topics and practitioner topics such as the Wiring Regulations and IET Standards. The IET's high-quality book portfolio provides a comprehensive resource for the engineering and technology community.

The IET 2018 Books and eBooks Catalogue lists the new and forthcoming titles available from both our IET and SciTech Publishing imprints, providing you with the opportunity to conveniently browse our range. See page 71 for information on how to order print and eBooks from the IET.

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### KEY



IET



SciTech



eBook available



Electrical  
Standards Plus

All prices, rates and publication dates are subject to change without notice. Check the website or contact the sales team for the most up-to-date information and prices.

## 2018 HIGHLIGHTS



### Novel Radar Techniques and Applications

2 Volume Set

**Editor: Richard Klemm, et al.,** Fraunhofer Institute, Germany

This two volume set presents the state of-the-art in advanced radar, with an emphasis on ongoing novel research and development and contributions from an international team of leading radar experts.

▶ See page 44 for details



### Wind Power Modelling

3 Volume set

**Editor: Paul Veers,** National Renewable Energy Laboratory, USA

*Wind Power Modelling* is a three-volume set on wind farm power modelling; the key to efficient wind plant design and wind power growth.

The set covers every aspect – from wind flow over turbine component design to grid integration.

▶ See page 20 for details



### Swarm Intelligence

3 Volume Set

**Editor: Ying Tan,** Peking University, China

Covering principles and known approaches through to new and innovative algorithms, front-edge research methods, and their applications, this solid three-volume reference set will provide readers with a comprehensive view of the entire field of Swarm Intelligence.

▶ See page 7 for details

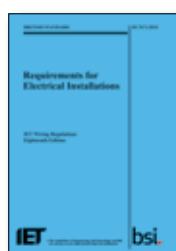


### Iris and Periocular Biometric Recognition

**Editors: Christian Rathgeb & Christoph Busch,** Darmstadt University, Germany & Gjøvik University College, Norway

This book covers iris and periocular recognition, a prominent field in biometrics recognition and identity science in the areas of security, computing and communications research and technologies.

▶ See page 49 for details



### Requirements for Electrical Installations: IET Wiring Regulations 18th Edition BS 7671:2018

The 18th edition is a major update to this title, with changes expected to include an entirely new section, Part 8, Energy Efficiency.

▶ See page 60 for details



### On-Site Guide to BS 7671:2018

As an essential guide to BS 7671, this incorporates the extensive changes in BS 7671:2018, making this a vital guide for keeping up to date.

▶ See page 60 for details

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[www.theiet.org/books](http://www.theiet.org/books)

NEW

## Big Data and Software Defined Networks

**Editor: Javid Taheri**  
Karlstad University, Sweden

This book provides crucial information on state-of-the-art advancements and architectures of Big Data and Software Defined Networking (SDN), and highlights general open issues in these innovating and growing fields. It explains how SDN can help Big Data applications run more efficiently and shows how Big Data analytics can be used to make better resource allocation decisions, and run smoother networks in Cloud data centres. A timely resource for researchers, developers and practitioners developing and implementing cloud-based solutions.

The IET Book Series on Big Data



Due Spring 2018 | Hardback | c.450pp | 978-1-78561-304-3  
PBPC0150 | £100 • \$160



NEW

## Data as Infrastructure for Smart Cities

**Authors: Larissa Romualdo Suzuki & Anthony C.W. Finkelstein**  
University College London, UK

The authors present a comprehensive framework of techniques for smart city data infrastructure design, a market estimated to grow substantially by 2020. Providing tools to enable processes with innovative use of technology and data, coupled with governance strategies, the book shows how to improve the quality of cross-domain city service management, and the decision making process. The framework has guided the design of several urban platforms in the European Union and the design of the City Data Strategy of the Mayor of London, UK.

The IET Book Series on Big Data



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-599-3  
PBPC0230 | £100 • \$160



NEW

## Modeling and Simulation of Complex Networks

**Editor: Muaz A. Niazi**  
COMSATS Institute of Information Technology, Pakistan

This title covers key topics and approaches for next-generation networks and complex communication systems, and the various aspects of modeling and simulation of these networks from a complex adaptive systems perspective. It gives an overview of different modeling paradigms and approaches for the Internet of Things, wireless sensors, the cloud and big data networks. Case studies and examples of real-world complex systems are also included, making it invaluable for professionals working in next generation networks and complex communication systems.

The IET Book Series on Big Data



Due Summer 2018 | Hardback | c.500pp | 978-1-78561-355-5  
PBPC0180 | £100 • \$160



NEW

## Parallel and Distributed Simulations for Big Data Processing

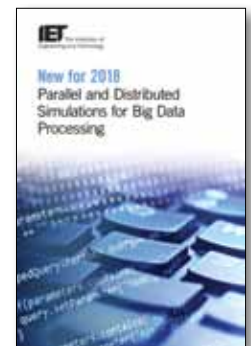
**Editors: Asad W. Malik et al.**  
National University of Sciences and Technology, Pakistan

With contributions from world-leading researchers and scholars in the field of modelling, this handbook covers the fundamental concepts, latest advances, developments and future directions in the modelling and simulation of large-scale distributed systems. It discusses advanced topics such as large-scale simulation techniques, High Level Architecture (HLA), Runtime Infrastructure (RTI) design, process cloning, web-based simulation, data gathering and simulation validation. Ideal for those who design and implement large-scale distributed systems.

The IET Book Series on Big Data



Due Summer 2018 | Hardback | c.850pp | 978-1-78561-315-9  
PBPC0170 | £125 • \$195



NEW

## SysML for Systems Engineering: A model-based approach

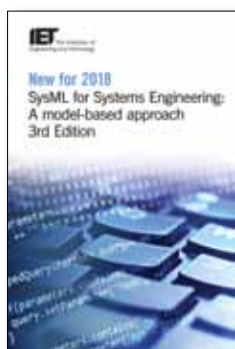
3rd Edition

**Authors: Jon Holt & Simon Perry**  
Scarecrow Consultants, UK

Now with several new chapters, this third edition of the popular guide to SysML for systems engineering has been fully aligned with latest version (SysML 1.4) of the standard, and includes updates of the core modelling notation, standards models, benefits of MBSE, model management, model maturity and value chain modelling. The book also describes how to implement SysML and MBSE in an organisation, and how to model real projects effectively. An extensive case study makes the book invaluable for practising systems engineers.



Due Summer 2018 | Hardback | c.1000pp | 978-1-78561-554-2  
PBPC0200 | £100 • \$160



## Foundations for Model-based Systems Engineering: From patterns to models

**Authors: Jon Holt et al.**  
Scarecrow Consultants, UK

The practice of Model-Based Systems Engineering (MBSE) is becoming more widely adopted in industry, academia and commerce, and as the use of modelling matures in the real world, so the need increases for more guidance on how to model effectively and efficiently. This practical book describes a number of systems-level 'patterns' that may be applied using the systems modelling language SysML for the development of any number of different applications and as the foundations for a system model.



2016 | Hardback | 416pp | 978-1-78561-050-9  
PBPC0140 | £85 • \$135



## Trusted Platform Modules: Why, when and how to use them

**Author: Ariel Segall**  
Akamai Technologies, USA

Trusted computing is an emerging technology that aims to make computers safer, less prone to viruses and malware, and therefore better for end users. This practical introduction debunks the myths around Trusted Platform Modules (TPMs) and trusted computing, and focuses on the main uses for TPMs. It includes practical considerations such as when they should and should not be used, and describes the benefits they provide. Using real-world case studies and worked examples, the book explains how TPMs can be used to substantially improve platform and network security.



2016 | Hardback | 400pp | 978-1-84919-893-6  
PBPC0130 | £75 • \$120



## IET JOURNALS

### IET Computers & Digital Techniques

**Editor-in-Chief:**  
**Professor Andy Tyrrell**  
University of York, UK

*IET Computers & Digital Techniques* publishes technical papers describing recent research and development work in all aspects of digital system-on-chip design and test of electronic and embedded systems, including the development of design automation tools (methodologies, algorithms and architectures).

[www.ietdl.org/IET-CDT](http://www.ietdl.org/IET-CDT)





### Other IET Books related to Computing:

Product code	Title	Author(s)/Editor(s)	Page
PBTE0690	<b>5G Wireless Technologies</b>	Angeliki Alexiou	52
PBTE0740	<b>Access, Fronthaul and Backhaul Networks for 5G &amp; Beyond</b>	Muhammad Ali Imran, et al.	52
PBSE0090	<b>Authentication Technologies for Cloud Technology, IoT, and Big Data</b>	Yasser M. Alginahi & Muhammad N. Kabir	48
PBTR0090	<b>Autonomous Decentralized Systems and their Applications in Transport and Infrastructure</b>	Kinji Mori & Takashi Kunifuji	57
PBTE0700	<b>Cloud and Fog Computing in 5G Mobile Networks: Emerging advances and applications</b>	Evangelos Markakis	52
SBTE5020	<b>Cognitive Radio Engineering</b>	Charles W. Bostian	54
PBSE0070	<b>Data Security in Cloud Computing</b>	Vimal Kumar et al.	49
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PBHE0120	<b>Engineering High Quality Medical Software: Regulations, standards, methodologies and tools for certification</b>	Antonio Coronato	36
PBSE0020	<b>Engineering Secure Internet of Things Systems</b>	Benjamin Aziz	50
PBHE0100	<b>Enhanced Living Environments: From models to technologies</b>	Ciprian Dobre	37
PBSE0080	<b>Hand-Based Biometrics: Methods and technology</b>	Martin Drahanský	48
PBCS0260	<b>High Speed Data Converters</b>	Ahmed M.A. Ali	41
PBCS0410	<b>Industrial Practices in System-on-Chip Design Verification, Validation and Testing</b>	C. P. Ravikumar	40
PBHE0150	<b>Integrative Modeling and Simulation Architecture for Value-based Learning Healthcare Systems</b>	Bernard P. Zeigler et al.	37
PBSE0050	<b>Iris and Periocular Biometric Recognition</b>	Christian Rathgeb & Christoph Busch	3, 49
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PBTE0670	<b>Managing the Internet of Things: Architectures, theories and applications</b>	Jun Huang & Kun Hua	54
PBPO1310	<b>Metaheuristic Optimization in Power Engineering</b>	Jordan Radosavljević	23
PBSE0030	<b>Mobile Biometrics</b>	Guodong Guo & Harry Wechsler	49
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PBPO1180	<b>Modelling and Simulation of Complex Power Systems</b>	Antonello Monti & Andrea Benigni	23
PBPO1160	<b>Modelling and Simulation of HVDC Transmission</b>	Minxiao Han & Aniruddha Gole	24
PBTE0730	<b>Network as a Service for Next Generation Internet</b>	Qiang Duan & Shangguang Wang	53
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PBSE0060	<b>Security, Privacy and Trust in the Internet of Things</b>	Hannan Xiao & Ying Zhang	49
PBCE1140	<b>Signal Processing and Machine Learning for Brain-Machine Interfaces</b>	Toshihisa Tanaka & Mahnaz Arvaneh	9
PBTE0710	<b>Understanding Telecommunications Networks, 2nd Edition</b>	Andy Valdar	53
PBSE0040	<b>User-Centric Privacy and Security in Biometrics</b>	Claus Viehauer	50
PBPO125A	<b>Wind Power Modelling: Atmosphere and wind plant flow</b>	Paul Veers	3, 20, 27
PBPO125C	<b>Wind Power Modelling: Power plants and grid integration</b>	Paul Veers	3, 20, 27
PBPO125B	<b>Wind Power Modelling: Turbines and systems</b>	Paul Veers	3, 20, 27

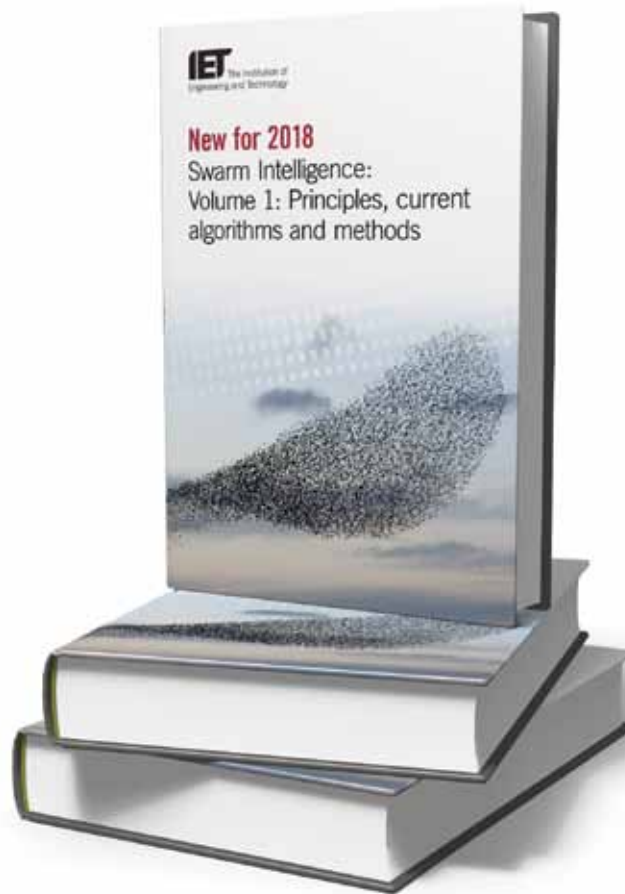
# Swarm Intelligence

## 3 Volume Set

**Editor: Ying Tan**

Peking University, China

Covering principles and known approaches through to new and innovative algorithms, front-edge research methods, and their applications, this solid three-volume reference set will provide readers with a comprehensive view of the entire field of Swarm Intelligence, systematically and thoroughly.



### **Swarm Intelligence: Volume 1: Principles, current algorithms and methods**

#### **Topics include:**

- The basic principles of well-known swarm intelligence algorithms
- Efficiency improvements (from typical PSO, ACO and swarm intelligence algorithms to swarm robotics methods)

### **Swarm Intelligence: Volume 2: Innovation, new algorithms and methods**

#### **Topics include:**

- Front-edge research with newly proposed swarm intelligence algorithms and methods

### **Swarm Intelligence: Volume 3: Applications**

#### **Topics include:**

- The latest real-world applications of swarm intelligence algorithms
- Related evolutionary algorithms to show the effectiveness and validation of swarm intelligence

Essential reading for engineers, researchers, professionals and practitioners working in the fields of computer science, information technology, artificial intelligence, neural networks, computational intelligence, bioengineering, physics, mathematics, and social sciences.

**Publish date:** Summer 2018

#### **Volume 1:**

Retail Price: £125/\$200  
Hardback, 700pp  
ISBN: 978-1-78561-627-3  
Product Code: PBCE119A

#### **Volume 2:**

Retail Price: £125/\$200  
Hardback, c.600pp  
ISBN: 978-1-78561-629-7  
Product Code: PBCE119B

#### **Volume 3:**

Retail Price: £125/\$200  
Hardback, c.850pp  
ISBN: 978-1-78561-631-0  
Product Code: PBCE119C

#### **3-Volume set:**

Retail Price: £300/\$480  
Hardback, c.2150pp  
ISBN: 978-1-78561-633-4  
Product Code: PBCE119X

▶ *Also see page 10.*

NEW

## Frequency Weighted Model Order Reduction: Techniques and applications

**Authors: Victor Sreeram et al.**  
University of Western Australia, Australia

This volume describes the technique of frequency weightings in model-reduction, a procedure that helps to reduce the approximation errors that are inherent in the model-reduction process. The book gives an introduction to model reduction and frequency weighted model reduction problems, as well as the mathematical methods used in various model reduction techniques. A host of other topics are also covered, making it essential reading for researchers in system control, modelling and signal processing.



Due Summer 2018 | Hardback | c.352pp | 978-1-78561-048-6  
PBCE1010 | £105 • \$170



NEW

## Ground Penetrating Radar: Improving sensing and imaging through numerical modeling

**Authors: Lucas Travassos & Nathan Ida**  
Universidade Federal de Santa Catarina, Brazil & University of Akron, USA

This book covers modeling and simulation methods as well as the support tools available to improve imaging and sensing for Ground Penetrating Radar (GPR). After an introduction to the basic concepts, the authors present a more detailed discussion, enabling readers to identify and apply the technique that best suits their goals. It is therefore an invaluable resource for anyone working with GPR. An appendix provides the basic concepts for a general mathematical description of the variables of interest and their spatial and temporal variations.



Due Autumn 2018 | Hardback | c.400pp | 978-1-78561-493-4  
PBCE1150 | £100 • \$160



The IET International Book Series on Sensors

NEW

## Microwave Gauging: Accurate sensing, measurement and monitoring in the industrial environment

**Author: Nathan Ida**  
University of Akron, USA

This book deals with the sensing of sheet products for a variety of properties including dimensions, moisture, electrical attributes, and curing state, using open microwave resonators. The author introduces the ideas and tools needed, and then presents a coherent, entirely practical approach to the design of open resonator microwave sensors. Ideal for design and production engineers in the rubber, paper, fabrics and wood industries as well as academics in electromagnetics, microwave and sensing specialisations.



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-140-7  
PBCE1030 | £120 • \$190

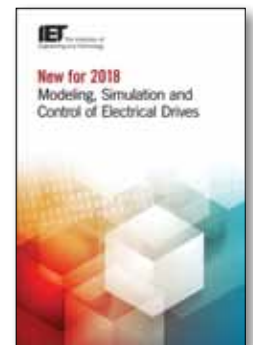


NEW

## Modeling, Simulation and Control of Electrical Drives

**Editors: M.F. Rahman & Sanjeet Kumar Dwivedi**  
University of New South Wales, Australia & Curtin University, Australia

This book provides insights into state-of-the-art control techniques for different types of AC machines (i.e. Induction Motors, Permanent Magnet Synchronous Motors and Permanent Magnet Brushless DC Motors). The book gives up-to-date references along with a framework of the different types of AC machines modeling and control algorithms using MATLAB®/Simulink®. Ideal for professional engineers and practitioners in AC drives, and as an advanced textbook for Masters and PhD students working in the control of electric drives.



Due Autumn 2018 | Hardback | c.350pp | 978-1-78561-587-0  
PBCE1180 | £100 • \$160





NEW

## Motion-Induced Eddy Current Techniques for Non-Destructive Testing and Evaluation

**Authors: Hartmut Brauer et al.**  
Technische Universität Ilmenau, Germany

This title deals with non-destructive testing (NDT) and evaluation (NDE) via electromagnetic methods. Focusing on motion-induced eddy current testing techniques used for conductive materials, the book emphasises applications, including defectoscopy of metallic objects, of multi-layer structures and of composite materials, as well as sismometry using LET. Perfect for researchers and advanced students working in non-destructive industrial sensing and testing, developers of NDT/NDE methods, material sensing engineers and material scientists.



The IET International Series on Sensors



Due Summer 2018 | Hardback | c.400pp | 978-1-78561-215-2  
PBCE1060 | £120 • \$190



NEW

## Sensory Systems for Robotic Applications

**Editor: Ravinder Dahiya**  
University of Glasgow, UK

With contributions from an international team of experts in robot sensing, this volume describes the hardware and software that enables robots to sense and estimate. Topics include the various type of sensors used in robotics (tactile, vision, audio etc.), the different sensing schemes (e-skin, tactile skin, e-nose etc.), as well as the range of sensing technologies, and system issues. Written for researchers working in robotics and sensors, the book will also interest graduate and advanced students in the field.



The IET International Series on Sensors



Due Winter 2018 | Hardback | c.504pp | 978-1-84919-948-3  
PBCE0970 | £110 • \$185



NEW

## Sensors in the Age of the Internet of Things: Technologies and applications

**Editors: Octavian Adrian Postolache & Edward Sazonov**

Instituto de Telecomunicacoes, Lisbon, Portugal & University of Alabama, Alabama, USA

This book focuses on the technologies constituting the Internet of Things from a sensor perspective, and describes connected sensors for smart cities, buildings, transportation, smart ports, energy infrastructure, smart home sensing, emergency management, personalised healthcare, precision agriculture and other applications. Starting at the level of physical sensing, it covers network architecture, Internet connectivity and communication protocols for IoT and cyber security. It concludes with methodologies for the integration and processing of sensor information with a focus on relevant sensors for IoT applications.



The IET International Series on Sensors



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-634-1  
PBCE1220 | £100 • \$160



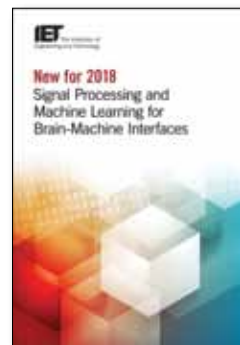
NEW

## Signal Processing and Machine Learning for Brain-Machine Interfaces

**Editors: Toshihisa Tanaka & Mahnaz Arvaneh**

Tokyo University of Agriculture and Technology, Japan & University of Sheffield, UK

This book introduces signal processing and machine learning techniques for Brain Machine Interfacing/Brain Computer Interfacing (BMI/BCI), and their practical and future applications in neuroscience, medicine, and rehabilitation. This is an emerging and challenging technology in engineering, computing, machine learning, neuroscience and medicine, and so the book will interest researchers, engineers, professionals and specialists from all of these areas who need to know more about cutting edge technologies in the fields.



Due Summer 2018 | Hardback | c.400pp | 978-1-78561-398-2  
PBCE1140 | £100 • \$160



NEW

## Swarm Intelligence: Volume 1: Principles, current algorithms and methods

**Editor: Ying Tan**  
Peking University, China

Covering principles and known approaches through to new research developments, analyses and applications of typical swarm intelligence methods, the aim of this three-volume book set is to provide readers with a full view of the field of swarm intelligence. In Volume 1, the authors introduce the basic principles of well-known swarm intelligence algorithms and efficient improvements (from typical PSO, ACO and swarm intelligence algorithms to swarm robotics methods).



Due Summer 2018 | Hardback | c.700pp | 978-1-78561-627-3  
PBCE119A | £125 • \$200



NEW

## Swarm Intelligence: Volume 2: Innovation, new algorithms and methods

**Editor: Ying Tan**  
Peking University, China

Covering principles and known approaches through to new research developments, analyses and applications of typical swarm intelligence methods, the aim of this three-volume book set is to provide readers with a full view of the field of swarm intelligence. In Volume 2, the authors present front-edge research with newly proposed swarm intelligence algorithms and methods. Each chapter comes from a leading scholar in that area, making the book an essential resource for anyone in the field.



Due Summer 2018 | Hardback | c.600pp | 978-1-78561-629-7  
PBCE119B | £125 • \$200



NEW

## Swarm Intelligence: Volume 3: Applications

**Editor: Ying Tan**  
Peking University, China

Covering principles and known approaches through to new research developments, analyses and applications of typical swarm intelligence methods, the aim of this three-volume book set is to provide readers with a full view of the field of swarm intelligence. In this third volume, the authors present the latest real-world applications of swarm intelligence algorithms and related evolutionary algorithms to show the effectiveness and validation of swarm intelligence, and encourage more researchers and practitioners to use them in ongoing and future projects.



Due Summer 2018 | Hardback | c.850pp | 978-1-78561-631-0  
PBCE119C | £125 • \$200



NEW

## Theory, Design and Implementation of Embedded Robust Control with MATLAB®

**Authors: Petko Hristov Petkov et al.**  
University of Sofia, Bulgaria

This book presents the theoretical and practical aspects of robust control design and implementation using MATLAB® and Simulink®. Combining knowledge from Control System Design and Computer Engineering, it describes the whole design process cycle from uncertainty plant modelling to the embedding of high-order robust controllers in 32-bit DSP and FPGA. It also shows how robust controllers can be implemented in modern digital devices with higher closed-loop performance. Perfect for anyone interested in the design of robust controllers using MATLAB®.



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-330-2  
PBCE1130 | £100 • \$160



NEW

## Wearable Exoskeleton Systems: Design, control and applications

**Editors: Shaoping Bai et al.**  
Aalborg University, Denmark

This book reports the recent advances and technology breakthroughs in exoskeleton developments in the fields of robotics and mechanical design. Topics covered include mechanism design and control involving close human-robot interaction scenarios; human motion intention detection and support; comfort and ergonomics; and safety regulations for various wearable robot applications. The book will be of interest to engineers and researchers in academia as well as manufacturing companies interested in developing new markets in wearable exoskeleton robotics.



**Due Spring 2018 | Hardback | c.450pp | 978-1-78561-302-9**  
**PBCE1080 | £100 • \$160**



NEW

## Control of Mechatronic Systems

**Authors: Levent Güvenç et al.**  
Ohio State University, USA

This comprehensive book will introduce advanced students, with only a basic background in control theory, to an array of techniques they can easily implement and use to meet the required performance specifications for their mechatronic applications. Most of the design approaches presented in the book are coded in MATLAB®, compiled by the authors together in a GUI (Graphical User Interface) under the name COMES (Control of Mechatronic Systems toolbox), available in the user contributed material part of the Mathworks MATLAB® website for free download and use with this book.



**2017 | Hardback | 216pp | 978-1-78561-144-5**  
**PBCE1040 | £85 • \$135**



NEW

## Flexible Robot Manipulators: Modelling, simulation and control

2nd Edition

**Authors: M. O. Tokhi & A. K. M. Azad**  
University of Sheffield, UK & Northern Illinois University, USA

This book provides an account of the progress being made in the field of modelling and control of lightweight flexible manipulator systems. It covers the main issues in system simulation and modelling, classical and advanced control and soft computing control. For each section it gives an overview of the problem as well as a review of the current thinking. It also looks at algorithm development and evaluation, software development for computer implementation of the algorithm and verification and assessment of the results. References are included for further reading.



**2017 | Hardback | 536pp | 978-1-84919-583-6**  
**PBCE0860 | £120 • \$190**



NEW

## RFID Protocol Design and Optimization for the Internet of Things

**Authors: Alex X. Liu et al.**  
Michigan State University, USA

RFID systems are a very pervasive and low cost technology used to automatically identify and track tags attached to objects, which contain electronically stored information. RFIDs are used in countless applications such as object tracking, 3D positioning, indoor localization, supply chain management, automotive, inventory control, anti-theft, anti-counterfeit, and access control. In this book, the authors aim to demystify complicated RFID protocols and explains in depth the principles, techniques, and practices in designing and optimizing them.



**2017 | Hardback | c.280pp | 978-1-78561-332-6**  
**PBCE1120 | £100 • \$160**



The IET International Series on Sensors

NEW

## The Inverted Pendulum in Control and Robotics: From theory to new innovations

**Editors: Olfa Boubaker & Rafael Iriarte**  
University of Carthage, Tunisia & National Autonomous University of Mexico, Mexico

The inverted pendulum is a classic problem in dynamics and control theory and is widely used as a benchmark for testing control algorithms. This book provides an overall picture of historical and current developments in nonlinear control theory, based on the simple structure and rich nonlinear model of the inverted pendulum model, and also discusses key applications using different experimental models of this system.



2017 | Hardback | 420pp | 978-1-78561-320-3  
PBCE1110 | £100 • \$160



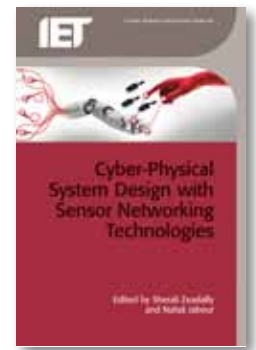
## Cyber-Physical System Design with Sensor Networking Technologies

**Editors: Sherali Zeadally & Nafaâ Jabeur**  
University of Kentucky, USA & German University of Technology, Oman

This is the first book in this new area and it uniquely focuses on sensor networks in cyber-physical systems. The book describes how wireless sensor networking technologies can help in establishing and maintaining seamless communications between the physical and cyber systems – acquiring data, pushing data from the physical system to the cyber system, and routing decisions to appliances.



2016 | Hardback | 368pp | 978-1-84919-824-0  
PBCE0960 | £85 • \$140



## Mechatronic Hands: Prosthetic and robotic design

**Author: Paul H. Chappell**  
University of Southampton, UK

Gathering the accumulated knowledge on the topic gained at Southampton University over several decades, this book describes the technical design, concepts and characteristics of the main components that go into constructing an artificial hand, whether it is a simple design that does not have a natural appearance or a more complicated design where there are multiple movements of the fingers and thumb. This book is a must-read for students and lecturers in robotics, prosthetics and mechatronics as well as practitioners involved in the design and manufacture of prosthetics.



2016 | Hardback | 192pp | 978-1-78561-154-4  
PBCE1050 | £105 • \$170



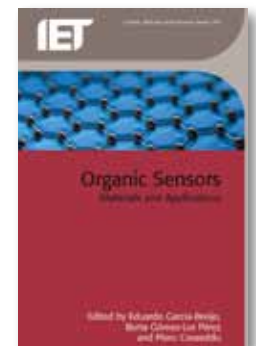
## Organic Sensors: Materials and applications

**Editors: Eduardo Garcia-Breijo et al.**  
Polytechnic University of Valencia, Spain

This book features contributions from an international panel of leading researchers in organic electronics and their applications as sensors. It reviews the state-of-the-art in the use of organic electronic materials such as organic semiconductors, conducting polymers, chemically functionalised materials, and composite materials as physical, chemical and biomedical sensors in a variety of application settings. This book is cross-disciplinary in its approach and combines electronic engineering, materials science, chemistry, physics and healthcare technology.



2016 | Hardback | 312pp | 978-1-84919-985-8  
PBCE1000 | £105 • \$170



The IET International Book Series on Sensors

## Practical Robotics and Mechatronics: Marine, space and medical applications

**Author: Ikuo Yamamoto**  
Nagasaki University, Japan

This book provides an essential introduction on how to successfully create practical robotics and mechatronics. It is based on the author's 30 years of experience in robotics development at Mitsubishi Heavy Industries, Ltd., JAMSTEC, and Nagasaki University, and contains many examples of real-world robots from new underwater vehicles, ships, robotic fish and unmanned aviation robotics, to space robotics, and medical robotics.



2016 | Hardback | 168pp | 978-1-84919-968-1  
PBCE0990 | £95 • \$150



## Recent Trends in Sliding Mode Control

**Editors: Leonid Fridman et al.**  
UNAM, Mexico

This book describes recent advances in the theory, properties, methods and applications of sliding mode control (SMC), including a discussion about the advantages and disadvantages of different SMC algorithms; a new Lyapunov-based approach for design of such controllers; gain adaptation for arbitrary order sliding mode control; new methods for design of arbitrary order sliding mode surfaces; and new applications in air breathing hypersonic vehicles, electropneumatic actuators, wind-energy conversion systems, and control of electrical machines with saturation.



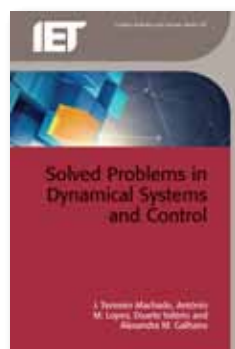
2016 | Hardback | 440pp | 978-1-78561-076-9  
PBCE1020 | £120 • \$190



## Solved Problems in Dynamical Systems and Control

**Authors: Duarte Valério et al.**  
University of Lisbon, Portugal

This book presents a collection of exercises on dynamical systems, modelling and control. Each topic covered includes a summary of the theoretical background and exercises with solved problems on fractional calculus and simple tools for nonlinear systems. Topics covered include: mathematical models; PID controller synthesis; controller synthesis by pole placement; fractional order systems and controllers and many others. This book is essential reading for advanced students with courses in modelling and control in engineering, applied mathematics, biomathematics and physics.



2016 | Hardback | 448pp | 978-1-78561-174-2  
PBCE1070 | £50 • \$80



## Analysis and Design of Reset Control Systems

**Authors: Yuqian Guo et al.**  
Central South University, China

This book provides a comprehensive introduction to the theory of reset control. It draws on the authors' own research and that of others, to explore several new ideas on reset control systems including robust stability, frequency domain analysis, reset control systems with discrete-time reset actions and optimal reset design. It also emphasises applications of reset control systems to high precision positioning systems such as hard disk drive servo systems. This is essential reading for post-graduates, researchers and practitioners working in control theory.



2015 | Hardback | 200pp | 978-1-84919-703-8  
PBCE0940 | £90 • \$149





## Control-oriented Modelling and Identification: Theory and practice

**Editor: Marco Lovera**

Polytechnic University of Milan, Italy

This comprehensive collection covers the state-of-the-art in control-oriented modelling and identification techniques. With contributions from leading researchers in the subject, it covers the main methods and tools available to develop advanced mathematical models suitable for control system design, including an overview of the problems that can arise during the design process. It also takes a practical look at a variety of applications of advanced modelling and identification techniques.



2015 | Hardback | 408pp | 978-1-84919-614-7  
PBCE0800 | £79 • \$126

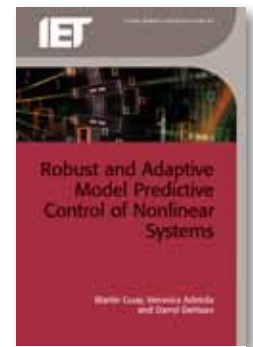


## Robust and Adaptive Model Predictive Control of Nonlinear Systems

**Authors: Martin Guay et al.**

Queen's University, Canada

This book offers a novel approach to adaptive control and provides a sound theoretical background to designing robust adaptive control systems with guaranteed transient performance. It focuses on the more typical role of adaptation as a means of coping with uncertainties in the system model. Topics covered include: estimation in adaptive control; performance improvement in adaptive control; and robust adaptive model predictive control for systems with exogeneous disturbances. This is essential reading for academics and advanced students working in control theory and applications.



2015 | Hardback | 272pp | 978-1-84919-552-2  
PBCE0830 | £79 • \$126



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PBTR0100	<b>Automated Road Vehicle Longitudinal Control: Modelling, control design, implementation and field testing</b>	Xiao-Yun Lu	57
PBPO0950	<b>Communication, Control and Security Challenges for the Smart Grid</b>	S. M. Muyeen & Saifur Rahman	28
PBHE0100	<b>Enhanced Living Environments: From models to technologies</b>	Ciprian Dobre	37
SBRA5170	<b>Ethical Decision-Making for Highly-Automated Military and Civilian Systems: A systems engineering approach</b>	Anthony Gillespie	45
PBPO0910	<b>Fuzzy Logic Control in Energy Systems with MATLAB®</b>	İsmail Hakkı Altas	29
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PBPO1220	<b>Modelling and Simulation of Small Scale Hydro Generation Systems</b>	René Wamkeue	24
PBPO0710	<b>Modern Control of Power Electronics Systems</b>	Pericle Zanchetta et al.	24
PBHE0010	<b>Nanobiosensors for Personalized and Onsite Biomedical Diagnosis</b>	Pranjal Chandra	39
PBHE0030	<b>Portable Biosensors and Point-of-Care Systems</b>	Spyridon E. Kintzios	38
PBPO1190	<b>Power-plant Control and Instrumentation, 2nd Edition</b>	David M. Lindsley et al.	26
PBTR0050	<b>Sliding Mode Control of Vehicle Dynamics</b>	Antonella Ferrara	58
PBPO1170	<b>Structural Control and Fault Detection of Wind Turbine Systems</b>	Hamid Reza Karimi	26
PBPC0200	<b>SysML for Systems Engineering: A model-based approach, 3rd Edition</b>	Jon Holt & Simon Perry	5
PBPO125A	<b>Wind Power Modelling: Atmosphere and wind plant flow</b>	Paul Veers	3, 20, 27
PBPO125C	<b>Wind Power Modelling: Power plants and grid integration</b>	Paul Veers	3, 20, 27
PBPO125B	<b>Wind Power Modelling: Turbines and systems</b>	Paul Veers	3, 20, 27



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NEW

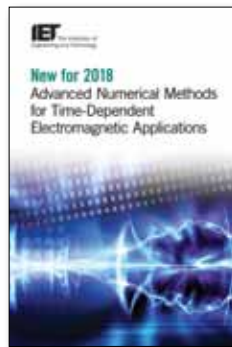
## Advanced Numerical Methods for Time-Dependent Electromagnetic Applications

**Authors: N. V. Kantartzis et al.**  
University of Thessaloniki, Greece

With contributions from leading names in the area, this book expands on several aspects of computational electromagnetics and advanced numerical techniques with cutting-edge applications, and proposes guidelines for the optimised design of several contemporary structures. As well as standard techniques, the authors cover many other time-domain schemes, including ADI, polynomial chaos, stochastic methods, enhanced curvilinear implementations and novel GPU/CUDA realisations. For researchers in electromagnetics and related areas.



Due Summer 2018 | Hardback | c.450pp | 978-1-78561-396-8  
SBEW5320 | £110 • \$175



NEW

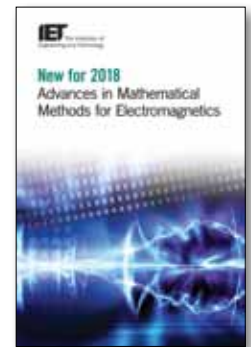
## Advances in Mathematical Methods for Electromagnetics

**Editors: Kazuya Kobayashi & Paul Denis Smith**  
Chuo University, Japan & Macquarie University, Australia

This title covers recent progress in advanced analytical and associated numerical methods applied to problems arising in all areas of electromagnetics. It focuses on applying advanced or novel mathematical techniques to produce analytical solutions or effective analytical-numerical methods for computational electromagnetics addressing more general problems. Each chapter outlines its topic; discusses its scientific context and importance; describes approaches and results; and ends by describing which techniques work best for different problems.



Due Autumn 2018 | Hardback | c.700pp | 978-1-78561-384-5  
SBEW5280 | £120 • \$195



NEW

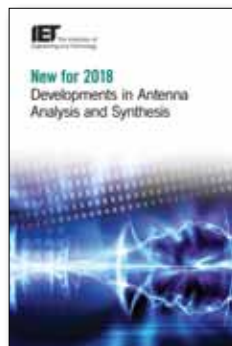
## Developments in Antenna Analysis and Synthesis

**Editor: Raj Mittra**  
University of Central Florida, USA

This volume addresses practical issues which antenna design engineers face every day and discusses the concepts and tools which will help them design better antennas. It covers recent advances in the antenna field, giving a compilation of the latest advances and designs. Topics include antenna pattern synthesis; reconfigurable and active antennas; MIMO antennas; reflectarray antennas; 3-D printed antennas and many more.



Due Autumn 2018 | Hardback | c.500pp | 978-1-78561-374-6  
SBEW5310 | £110 • \$175



NEW

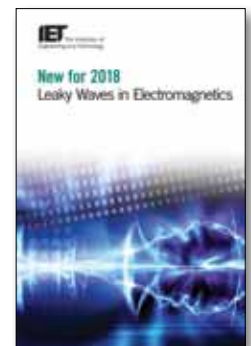
## Leaky Waves in Electromagnetics

**Authors: Paolo Burghignoli et al.**  
Università "La Sapienza" di Roma, Italy

This is the first book to provide a unified treatment of the theory and the variety of applications of leaky waves. Topics covered include, the theoretical basis of leaky waves in uniform and periodic structures; applications in radiation and antennas; scattering; metal and dielectric waveguides; planar structures and complex media. This is a vital resource for academic and research lab engineers in electromagnetics theory, antennas, applied physics and related systems applications.



Due Spring 2018 | Hardback | c.368pp | 978-1-61353-213-3  
SBEW5220 | £60 • \$95



NEW

## Light Filaments: Structures, challenges and applications

**Editors: Jean-Claude Diels et al.**  
University of New Mexico, USA

This edited volume starts with tutorials about the science of filamentation before presenting in-depth chapters on the latest research, technologies and applications. It covers wide aspects of light filaments considering various mediums of propagation, with structured or single filaments, and filaments of different colours, as well as combined filaments. It also includes a wide range of applications from strong field ionisation and molecular properties to laser development and beam shaping, THz, lasing in air and supercontinuum generation.



Due Summer 2018 | Hardback | c.450pp | 978-1-78561-240-4  
SBEW5270 | £120 • \$190



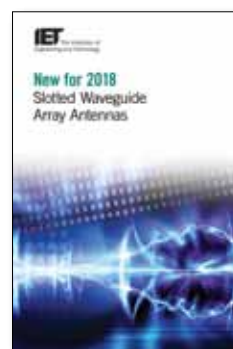
NEW

## Slotted Waveguide Array Antennas

**Authors: Sembiam Rengarajan & Lars Josefsson**

California State University, USA &  
Lars Microwave, Sweden

This is the first comprehensive treatment of slotted waveguide array antennas from an engineering perspective. It provides readers with a thorough foundation in applicable theories as well as hands-on instruction for practical analysis and design of important types of waveguide slot arrays. *Slotted Waveguide Array Antennas* goes beyond some of the commonly discussed topics and ventures into areas that include: higher order mode coupling and edge effects; performance optimisation in terms of bandwidth and pattern performance and manufacturing tolerances.



Due Summer 2018 | Hardback | c.400pp | 978-1-61353-189-1  
SBEW5170 | £75 • \$125

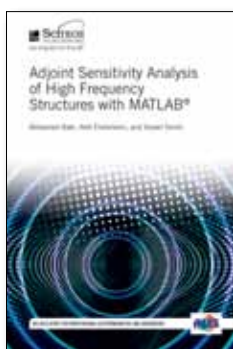


NEW

## Adjoint Sensitivity Analysis of High Frequency Structures with MATLAB®

**Author: Mohamed Bakr**  
McMaster University, Canada

This unique reference is the first to cover the theory of adjoint sensitivity analysis and uses the popular FDTD (finite-difference time-domain) method to show how wideband sensitivities can be efficiently estimated for different types of materials and structures. It includes a variety of MATLAB® examples to help readers absorb the content more easily. Topics covered include a review of FDTD and an introduction to adjoint sensitivity analysis; second-order sensitivity analysis; time-domain responses; and applications to nonlinear and anisotropic materials.



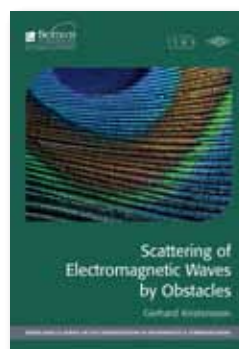
2017 | Hardback | 280pp | 978-1-61353-231-7  
SBEW5250 | £95 • \$150



## Scattering of Electromagnetic Waves by Obstacles

**Author: Gerhard Kristensson**  
Lund University, Sweden

The main purpose of *Scattering of Electromagnetic Waves by Obstacles* is to give a theoretical treatment of the scattering phenomena, and to illustrate numerical computations of some canonical scattering problems for different geometries and materials. The scattering theory is also important in the theory of passive antennas, and this book gives several examples on this topic.



2016 | Hardback | 760pp | 978-1-61353-221-8  
SBEW5240 | £95 • \$195



The ACES Series on Computational Electromagnetics and Engineering

Mario Boella Series on Electromagnetism in Information & Communication

## Higher-order Techniques in Computational Electromagnetics

**Authors: Roberto D. Graglia  
& Andrew F. Peterson**

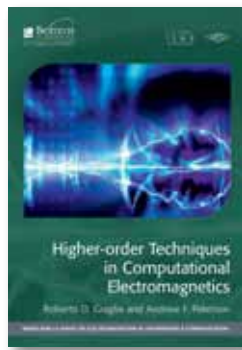
Polytechnic University of Turin, Italy &  
Georgia Institute of Technology, USA

*Higher-order Techniques in Computational Electromagnetics* takes a different approach to computational electromagnetics and looks at it from the viewpoint of vector fields and vector currents. It gives a more detailed treatment of vector basis function than is currently available in other books. It also describes the approximation of vector quantities by vector basis functions, explores the error in that representation and considers various other aspects of the vector approximation problem.

Mario Boella Series on Electromagnetism in Information & Communication



2015 | Hardback | 408pp | 978-1-61353-016-0  
SBEW5070 | £47 • \$79



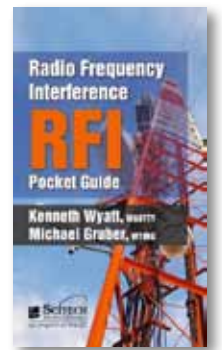
## Radio Frequency Interference Pocket Guide

**Authors: Kenneth Wyatt & Michael Gruber**  
ARRL Lab, USA

This handy pocket guide to essential radio frequency interference (RFI) is a valuable, pocket-sized reference for radio amateurs and others in the radio communication fields. Designed as a practical, quick reference, the *Radio Frequency Interference Pocket Guide* collates all the key facts and useful reference materials in one handy place to help the reader to understand basic EM theory, along with specific remediation steps in reducing or eliminating sources of radio interference. Topics covered include; EMC/RFI Fundamentals, EMC design, FCC rules, locating RFI and resolving RFI.



2015 | Spiral | 88pp | 978-1-61353-219-5 (SciTech)  
SBEW5230 | £15 • \$24.95



## The Finite-Difference Time-Domain Method for Electromagnetics with MATLAB® simulations

2nd Edition

**Authors: Atef Z. Elsherbeni  
& Veysel Demir**

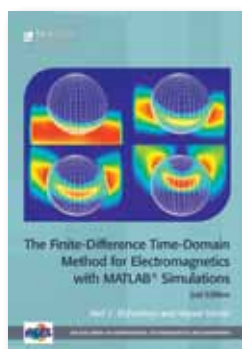
Colorado School of Mines, USA  
& Northern Illinois University, USA

This is one of the best books on computational electromagnetics for graduate students and practising engineering professionals in industry and government. This latest edition has been expanded to include four entirely new chapters on advanced topics in the mainstream of FDTD practice. In addition to advanced techniques it also includes applications and examples, and some 'tricks and traps' of using MATLAB® to achieve them. This second edition has been comprehensively updated and expanded to provide a must-have reference for someone who is performing FDTD research.

The ACES Series on Computational Electromagnetics and Engineering



2015 | Hardback | 560pp | 978-1-61353-175-4  
SBEW5140 | £84 • \$131



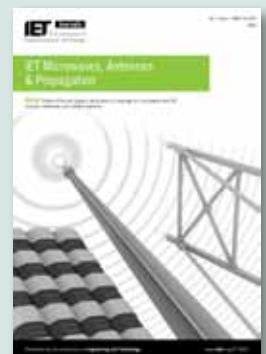
## IET JOURNALS

### *IET Microwaves, Antennas & Propagation*

**Editor-in-Chief: Professor  
Stavros Iezekiel**  
University of Cyprus, Cyprus

*IET Microwaves, Antennas & Propagation* comprehensively covers microwave and RF circuits, microwave and millimetre wave amplifiers, oscillators, switches, mixers and other components. This journal is essential reading for researchers, professionals and graduates, in the fields of antennas and propagation, and RF/microwave systems.

[www.ietdl.org/IET-MAP](http://www.ietdl.org/IET-MAP)





### Other IET Books related to Electromagnetic Waves:

Product code	Title	Author(s)/Editor(s)	Page
SBRA5140	<b>Biologically-Inspired Radar and Sonar: Lessons from nature</b>	Alessio Balleri	46
SBRA5110	<b>Digital Techniques for Wideband Receivers, 3rd Edition</b>	James Tsui & Chi-Hao Cheng	47
PBCE1030	<b>Microwave Gauging: Accurate sensing, measurement and monitoring in the industrial environment</b>	Nathan Ida	8
SBRA5090	<b>Modern Radar Detection Theory</b>	Antonio De Maio & Maria Sabrina Greco	47

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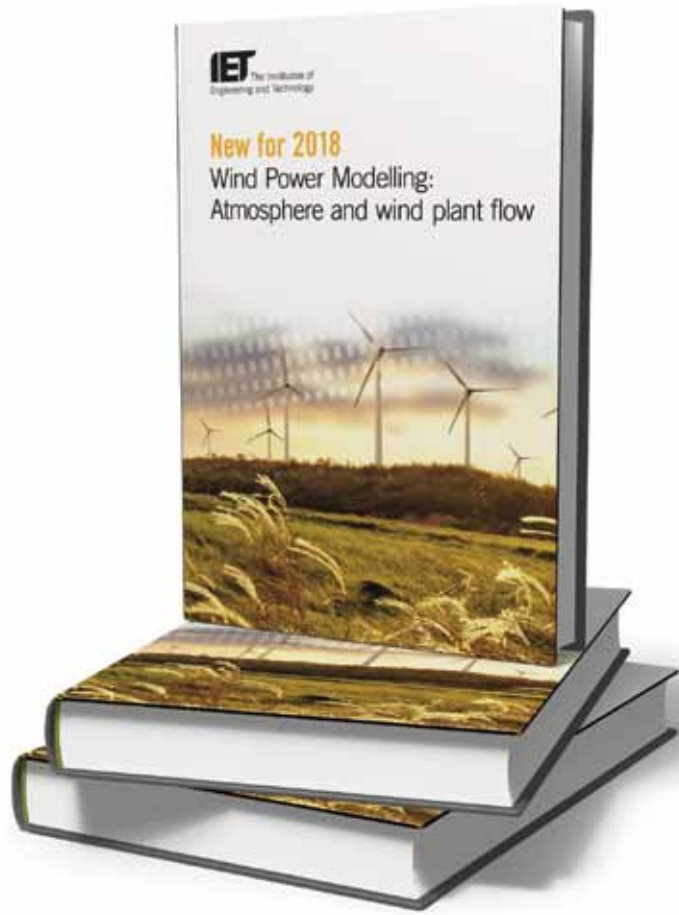
# Wind Power Modelling

## 3 Volume Set

**Editor: Paul Veers**

National Renewable Energy Laboratory, USA

*Wind Power Modelling* is a three-volume set on wind farm power modelling; the key to efficient wind plant design and wind power growth. The set covers every aspect – from wind flow over turbine component design to grid integration.



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- Grid modelling
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- Drive train analysis
- Controller design
- Offshore turbines and foundations

*Wind Power Modelling 3 Volume Set* addresses the entire breadth of the wind farm power modelling.

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**Publish date:** Summer 2018

**Atmosphere and wind plant flow:**

Retail Price: £100/\$160  
Hardback, 250pp  
ISBN: 978-1-78561-521-4  
Product Code: PBPO125A

**Turbines and systems:**

Retail Price: £100/\$160  
Hardback, c.250pp  
ISBN: 978-1-78561-523-8  
Product Code: PBPO125B

**Power plants and grid integration:**

Retail Price: £100/\$160  
Hardback, c.250pp  
ISBN: 978-1-78561-525-2  
Product Code: PBPO125C

**3-Volume set:**

Retail Price: £250/\$400  
Hardback, c.750pp  
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Product Code: PBPO125X

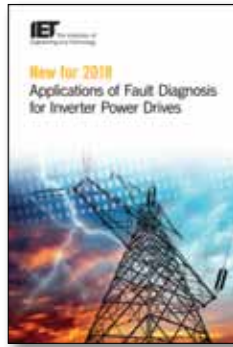
▶ Also see page 27.

NEW

## Applications of Fault Diagnosis for Inverter Power Drives

**Editor: Antonio Ginart**  
Sonnen Inc, USA

This is a comprehensive, application-oriented book on inverter power drive diagnostics. It focuses on early and embedded diagnosis, prognosis, and intrinsic reliability of inverter power drives and their applications. It covers a wide range of application areas, including motors, electric vehicles and renewable power generation. A valuable resource for researchers and practitioners in power electronics as well as system designers in aerospace, hybrid and electrical cars and solar and wind engineering design.



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-410-1  
PBP01200 | £100 • \$160



NEW

## Bifacial Photovoltaics: Technology, applications and economics

**Editors: Radovan Kopecek & Joris Libal**  
University of Konstanz & ISC Konstanz, Germany

This title focuses on bifacial photovoltaics, a topic for which there is a distinct lack of available, structured information and thus meets an increasing need. The book provides an overview of the history, status and future of bifacial PV technology with a focus on crystalline silicon technology, covering the areas of cells, modules, and systems. In addition, topics like energy yield simulations and bankability are addressed.



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-274-9  
PBP01070 | £100 • \$160



NEW

## Characterization of Wide Bandgap Power Semiconductor Devices

**Authors: Fei (Fred) Wang et al.**  
The University of Tennessee, Knoxville, USA

Based on the authors' years of extensive experience, this is an authoritative overview of Wide Bandgap (WBG) device characterization. It provides essential tools to assist researchers, advanced students and practicing engineers in performing both static and dynamic characterization of WBG devices, particularly those based on using silicon carbide (SiC) and gallium nitride (GaN) power semiconductors. The book presents practical considerations for real applications, and includes examples of applying the described methodology.



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-491-0  
PBP01280 | £100 • \$160

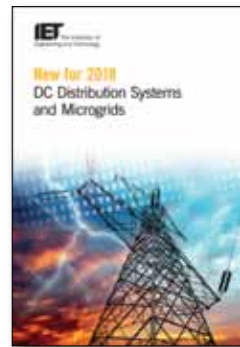


NEW

## DC Distribution Systems and Microgrids

**Editors: Tomislav Dragičević et al.**  
Aalborg University, Denmark

This volume from an international, world-class team is an up-to-date account of control and architectural design of DC distribution systems and microgrids. Ideal for engineers, academics and research students, it covers DC architecture and control, protection, microgrid standards, microgrid-based residential buildings and electric-vehicle charging technology. Practical details are given for real-world systems. It covers coordinated control design for intelligent real-time control of DC distribution systems, and explains stabilisation concepts.



Due Spring 2018 | Hardback | c.400pp | 978-1-78561-382-1  
PBP01150 | £100 • \$160



NEW

## Design of High-Efficiency Integrated AC-DC Converters

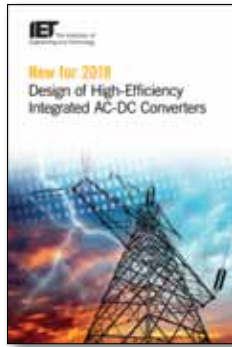
**Author: Ke-Horng Chen**

National Chiao Tung University, Taiwan

Of interest to researchers, students and designers working in power electronics, this book describes the advantages, challenges, underlying theory and applications of high-efficiency AC-DC converters that are built into circuits. This an increasingly popular design approach in power electronics, due to its potential to reduce environmental impact and improve converter thermal management. Applications covered include PSR battery chargers, high switching frequency AC-DC converters with WBG devices, and LED lighting designs.



Due Winter 2018 | Hardback | c.744pp | 978-1-84919-975-9  
PBP00830 | £105 • \$175



NEW

## Diagnosis and Fault Tolerance of Electrical Machines and Power Electronics

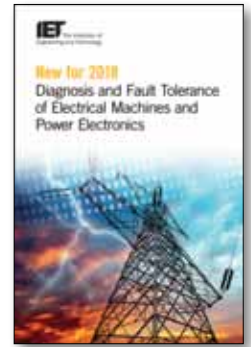
**Editor: Antonio J. Marques Cardoso**

University of Beira Interior, Portugal

Up-to-date and system-oriented, this is a comprehensive, unified guide to possible faults in electromechatronic systems. It encompasses techniques for fault analysis, diagnostics, condition monitoring methods, reconfiguration, remedial operating strategies and fault tolerance in electrical machines, power electronics and key types of drives. It also covers remnant life estimation. A vital resource for researchers and professionals specialising in the design, development and application of electrical machines and power electronics.



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-531-3  
PBP01260 | £100 • \$160



NEW

## Electrical Steels: Production, characterisation and applications

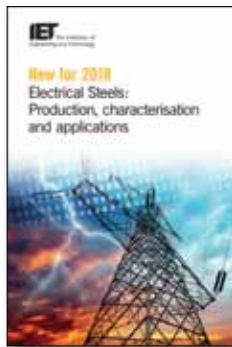
**Authors: Anthony John Moses et al.**

Cardiff University, UK

Completely up to date, this comprehensive, must-read reference covers the production, characterisation and applications of electrical steels. A range of uses are discussed, with renewable power generation covered in particular. The authors present the material in a systematic way, covering production, measurements, standards, uses, and a number of other important aspects, making it essential reading for any engineers and scientists working in the electrical generation and distribution sectors.



Due Summer 2018 | Hardback | c.375pp | 978-1-78561-276-3  
PBP01050 | £100 • \$160



NEW

## Energy Storage at Different Voltage Levels: Technology, integration, and market aspects

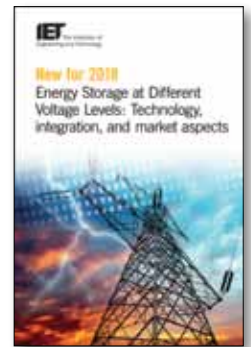
**Editors: Ahmed Faheem Zobaa et al.**

Brunel University, UK

This comprehensive work addresses current and future roles of energy storage, prospects and challenges in the generation, transmission, distribution and customer levels of the grid. An international team of experts disclose scenarios for future storage technologies and electric vehicles. They demonstrate the risks and mitigation solutions for integration problems while illustrating the importance of energy storage in building sustainable modern power system grids. Economic and management aspects are also addressed using case studies.



Due Spring 2018 | Hardback | c.400pp | 978-1-78561-349-4  
PBP01110 | £100 • \$160

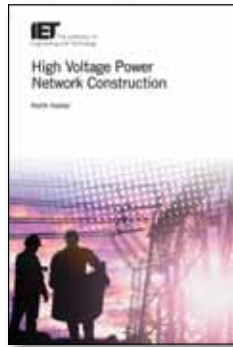


NEW

## High Voltage Power Network Construction

**Author: Keith Harker**  
Consultant

This book is an up-to-date and comprehensive guide for engineers and researchers in high-voltage network construction. The book is structured around three parts: the specification and implementation of a technical solution; the execution of quality management system procedural arrangements; and assurance that all duty holders have the requisite competencies. The book discusses financial aspects; engineering contracts; project management; and health, safety and environmental practice. Interfaces with thermal and renewable power generation are also covered.



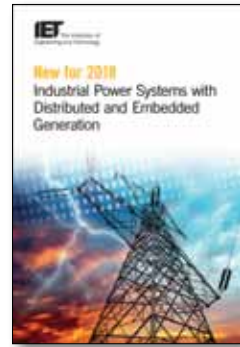
Due Spring 2018 | Hardback | c.800pp | 978-1-78561-423-1  
PBP01100 | £110 • \$175

NEW

## Industrial Power Systems with Distributed and Embedded Generation

**Author: Radian Belu**  
University of Alaska, USA

This book explores supporting technologies that can turn conventional passive electricity delivery networks into the active networks of the future. The focus is on industrial power systems, integrating new, dispersed sources with legacy systems of central generation, as well as allowing new technologies to operate effectively in isolated systems. The book includes systematic coverage of all related aspects and enabling technologies, from an introduction on the basics of power systems to microgrid operation, control and protection.



Due Summer 2018 | Hardback | c.400pp | 978-1-78561-152-0  
PBP00960 | £110 • \$175

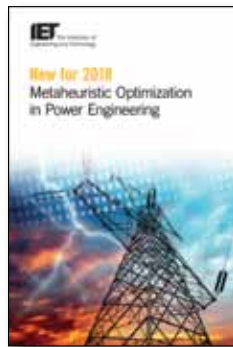


NEW

## Metaheuristic Optimization in Power Engineering

**Author: Jordan Radosavljević**  
University of Priština, Serbia

This comprehensive reference demonstrates the application of selected metaheuristic optimization methods to solving problems in power engineering, and gives an overview of metaheuristic methodology. The first part of this book gives a brief description of selected metaheuristic optimization methods, while the second part covers applications of the methods to power system problems. Each chapter contains a comprehensive review of recent literature. Ideal for researchers in power system analysis and power system optimization.



Due Spring 2018 | Hardback | c.250pp | 978-1-78561-546-7  
PBP01310 | £100 • \$160



NEW

## Modelling and Simulation of Complex Power Systems

**Editors: Antonello Monti & Andrea Benigni**  
Aachen University, Germany & University of South Carolina, USA

This essential tool for research on modern power systems presents the main concepts of modelling and simulation of power systems and their use for simulation-based design. Written in a systematic, didactic style, and employing examples and case studies, the book explains the key techniques and methods used by software packages. Simulation solvers implemented in C++, MATLAB® and Python are used to explain the structure and development of commercial simulation tools. Ideal for researchers and advanced students involved with power system research.



Due Spring 2018 | Hardback | c.400pp | 978-1-78561-404-0  
PBP01180 | £100 • \$160





NEW

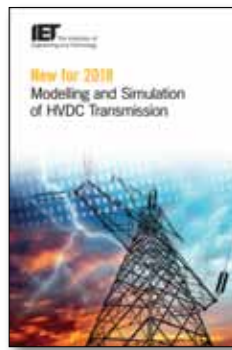
## Modelling and Simulation of HVDC Transmission

**Editors: Minxiao Han & Aniruddha Gole**  
Electric Power University, China & University of Manitoba, Canada

This book covers the development, modelling and simulation for high-voltage DC (HVDC) transmission systems. The development of HVDC technologies is introduced briefly before the role of modelling and simulation in the research and development of HVDC systems is discussed. The title covers the electromagnetic transient model, electromechanical transient model and the dynamic average model, with the electromagnetic transient model being emphasised. This book is a great resource for engineers, researchers and advanced students majoring in electric engineering.



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-380-7  
PBP01160 | £100 • \$160



NEW

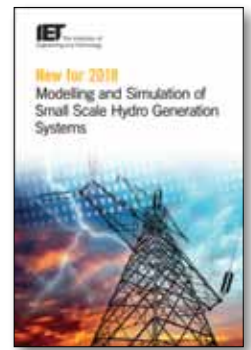
## Modelling and Simulation of Small Scale Hydro Generation Systems

**Editors: René Wamkeue & Innocent Kamwa**  
Université du Québec, Canada

This book provides engineers, researchers and advanced students with the mathematical modelling, control and simulation tools needed for the successful design, long-term management and maintenance of a small scale hydro-power plant (HPP). It also covers the hybrid operation with other small scale renewable power plants as well as the use of a storage system. The book features case studies and test-based design, and all system components are modelled using the well-known state space form technique.



Due Summer 2018 | Hardback | c.400pp | 978-1-78561-529-0  
PBP01220 | £100 • \$160



NEW

## Modern Control of Power Electronics Systems

**Authors: Pericle Zanchetta et al.**  
University of Nottingham, UK

This book deals with control and modulation of power converters for electrical drives, distributed generation and active power filtering, giving the theoretical background and hints for practical implementation. It covers an unusually wide range of power electronics applications; includes novel kinds of power converters, like multi-level converters and matrix converters and their specific pulse-width modulation techniques; and covers predictive, repetitive and AI-based control. Essential for academic and industrial researchers in power electronics.



Due Spring 2018 | Hardback | c.368pp | 978-1-84919-785-4  
PBP00710 | £80 • \$140



NEW

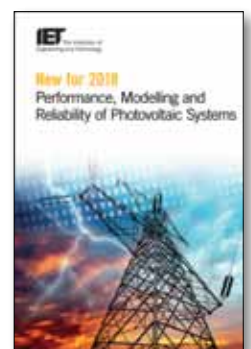
## Performance, Modelling and Reliability of Photovoltaic Systems

**Authors: George E. Georgiou et al.**  
The University of Cyprus, Cyprus

This guide provides a comprehensive range of topics for monitoring, modelling and assessing the performance of photovoltaic plants, and enabling effective asset management. Using real-world data, the book emphasises practical usability, systematically covering the knowledge needed to perform these tasks, from the basics all the way through to the evaluation of key performance indicators. Source code used to perform data analysis is also included. This book is ideal for anyone working with photovoltaic systems or plants.



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-256-5  
PBP01030 | £100 • \$160



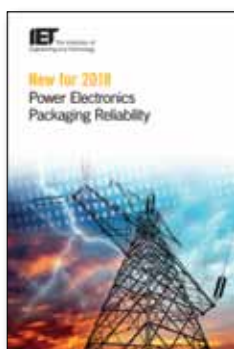
NEW


## Power Electronics Packaging Reliability

**Editor: C. Mark Johnson**

The University of Nottingham, UK

In this title, world-leading experts with close industry connections provide up-to-date, comprehensive coverage of the rapidly developing, and increasingly important topic of device degradation of power electronics modules. Building up the material systematically, the book describes the technologies involved in power electronic device manufacturing, with an emphasis on characterising key wear-out mechanisms and technologies. A must-read for all engineers involved with electronics for reliable power systems.



 Due Spring 2018 | Hardback | c.400pp | 978-1-78561-252-7  
PBP00990 | £120 • \$190



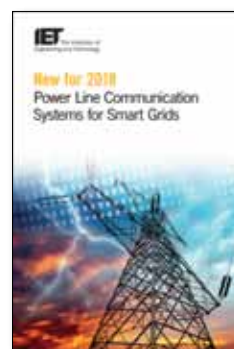
NEW

## Power Line Communication Systems for Smart Grids

**Editors: Ivan Roberto Santana Casella & Alagan Anpalagan**

Universidade Federal do ABC, Brazil &  
Ryerson University, Canada

This up-to-date reference for researchers and graduate students explains the principles for the use of narrowband and broadband power line communication technologies in smart grids. The book also describes how to use these technologies to improve energy monitoring, control and management, particularly for intermittent renewable energies. Starting with a structured overview of key principles, the authors use a didactic approach to fundamental topics, before covering more complex and advanced aspects, through to the state of the art.



 Due Autumn 2018 | Hardback | c.480pp | 978-1-78561-550-4  
PBP01320 | £100 • \$160



NEW

## Power Market Transformation: Reducing emissions and empowering consumers

**Author: Barrie Murray**

Electricity Market Services Ltd., UK

This book provides an analysis of the changes in the electricity market and quantifies their impact. It reviews strategic decisions in the management of changes in the sector and aims to identify the best way to meet the triple objectives of security, affordability and sustainability with low emissions. Economic issues are explained for the benefit of readers without economics backgrounds, making this ideal for engineers, academics, the power and utilities industries, and readers who want a better understanding of their sector's market.



 Due Spring 2018 | Hardback | c.350pp | 978-1-78561-481-1  
PBP01240 | £100 • \$160



NEW

## Power Systems Electromagnetic Transients Simulation: Power quality with renewable energy and electric vehicle integration

2nd Edition

**Author: Neville R. Watson**

University of Canterbury, New Zealand

This new edition of the classic on electromagnetic transient (EMT) simulation gives an up-to-date overview of the area. Thoroughly revised, with entirely new chapters, it covers new topics including: simulation of very large networks; modelling of power electronic devices; integration of renewable energy sources; and real-time simulation of complex systems. Extensive appendices with additional explanations and modelling code samples are also included. Ideal for academics, postgraduates and professionals working in power system transients.



 Due Autumn 2018 | Hardback | c.450pp | 978-1-78561-499-6  
PBP01230 | £110 • \$175



NEW

## Power-plant Control and Instrumentation

### 2nd Edition

**Authors:** David M. Lindsley et al.  
Kingston University, UK

This thoroughly revised and updated new edition of a classic book describes the systems and equipment used for measuring and controlling boilers and heat-recovery steam-generators employed in land and marine power plant and in process industries. This new edition features 50% new or updated content, including biomass firing, plant automation and increased flexibility. It continues to serve as a vital practitioner's guide to the design, installation, operation and maintenance of these systems, as well as an essential resource for researchers.



Due Spring 2018 | Hardback | c.330pp | 978-1-78561-419-4  
PBP01190 | £100 • \$160



NEW

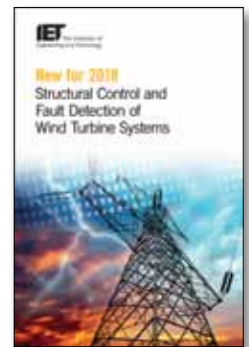
## Structural Control and Fault Detection of Wind Turbine Systems

**Editor:** Hamid Reza Karimi  
Politecnico di Milano, Italy

Edited by an internationally renowned expert, this is an integrated, theoretically thorough treatment of structural control and monitoring of wind turbines, covering all aspects of wind turbine systems of different sizes. It provides a systematic and comprehensive treatment of the design, construction and monitoring of wind turbine systems and covers integrated modelling, safety, control and supervision infrastructure. Ideal for researchers and engineers in mechatronics, control and mechanical engineering, particularly in wind energy.



Due Spring 2018 | Hardback | c.300pp | 978-1-78561-394-4  
PBP01170 | £100 • \$160



NEW

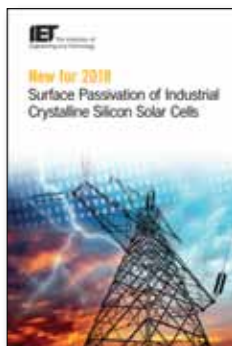
## Surface Passivation of Industrial Crystalline Silicon Solar Cells

**Editor:** Joachim John  
IMEC, Belgium

This timely, comprehensive work on solar cell surface passivation collects and conveys the scientific and technological progress made to implement dielectric passivation layers into the solar cell manufacturing process for c-Si solar cells. With a focus on industrial manufacturing, it describes the pathway from material research to full production implementation of dielectric layers for silicon solar cell passivation, and comprehensively covers all promising techniques. Ideal reading for researchers in photovoltaics R&D and manufacturing.



Due Summer 2018 | Hardback | c.350pp | 978-1-78561-246-6  
PBP01060 | £110 • \$180



NEW

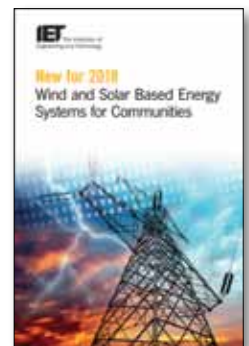
## Wind and Solar Based Energy Systems for Communities

**Editors:** Rupp Carriveau & David S-K. Ting  
University of Windsor, Canada

The editors bring together topics on the emerging area of community energy technology, covering key areas from generation through to considerations for the entire system, with an emphasis on the popular energy sources of wind power and solar power. For solar power, it discusses community photovoltaics, solar thermal, and desalination. The book also covers storage, Power-to-Gas, microgrids, energy conservation and financing. The work is therefore invaluable for researchers and engineers involved with community-level energy systems.



Due Summer 2018 | Hardback | c.300pp | 978-1-78561-544-3  
PBP01300 | £100 • \$160



NEW

## Wind Power Modelling: Atmosphere and wind plant flow

**Editor: Paul Veers**

National Renewable Energy Laboratory, USA

*Atmosphere and Wind Plant Flow* is the first book in a comprehensive three-volume set on wind farm power modelling; the key to efficient wind plant design and wind power growth. The set covers every aspect – from wind flow over turbine component design to grid integration. With chapters from eminent international experts, the set is written for researchers in academia and industry involved with all facets of wind power modelling. Covering atmospheric aspects and flow, this volume will also be of interest to atmospheric scientists and meteorologists.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-521-4  
PBP0125A | £100 • \$160



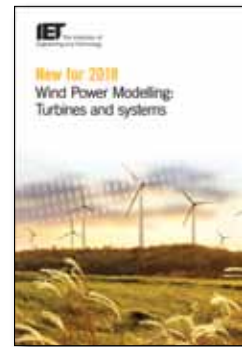
NEW

## Wind Power Modelling: Turbines and systems

**Editor: Paul Veers**

National Renewable Energy Laboratory, USA

*Turbines and Systems* is the second book in a comprehensive three-volume set on wind farm power modelling; the key to efficient wind plant design and wind power growth. The set covers every aspect – from wind flow over turbine component design to grid integration. With chapters from eminent international experts, the set is written for researchers in academia and industry involved with all facets of wind power modelling. Covering aerodynamics, design and analysis, this volume will particularly interest practitioners at wind turbine manufacturers.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-523-8  
PBP0125B | £100 • \$160



NEW

## Wind Power Modelling: Power plants and grid integration

**Editor: Paul Veers**

National Renewable Energy Laboratory, USA

*Power Plants and Grid Integration* is the third book in a comprehensive three-volume set on wind farm power modelling; the key to efficient wind plant design and wind power growth. The set covers every aspect – from wind flow over turbine component design to grid integration. With chapters from eminent international experts, the set is written for researchers in academia and industry involved with all facets of wind power modelling. Covering generation, storage technologies and grid models, this volume will be of particular interest to practitioners in the utilities sector.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-525-2  
PBP0125C | £100 • \$160



NEW

## Wireless Power Transfer: Theory, technology, and applications

**Editor: Naoki Shinohara**

Kyoto University, Japan

The comprehensive book written for engineering academics and research students covers the very latest in theory and technology for Wireless Power Transfer (WPT), including both coupling and radiative WPT. The technology is already seeing widespread use, e.g. for charging phones, and systems for charging electric vehicles are already under development. Edited by a highly respected authority with an extensive research background in the field, the title discusses theory, technologies, and current and future applications.



Due Spring 2018 | Hardback | c.250pp | 978-1-78561-346-3  
PBP01120 | £100 • \$160

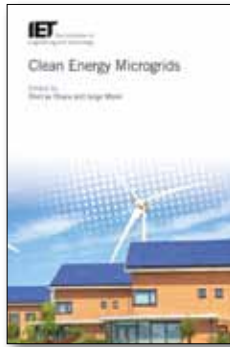


NEW

## Clean Energy Microgrids

**Editors: Shin'ya Obara & Jorge Morel**  
Kitami Institute of Technology, Japan

Microgrids – connecting entities smaller than cities, such as smaller villages or university campuses – are gaining importance. This book describes the latest technology in microgrids and economic, environmental and policy aspects of their implementation, including microgrids for cold regions, and future trends. Topics covered include an overview of clean energy systems; storage systems for microgrids; microgrid reliability and electricity quality and communication network security and privacy. International case studies are included.



2017 | Hardback | 376pp | 978-1-78561-097-4  
PBP00900 | £120 • \$190



NEW

## Communication, Control and Security Challenges for the Smart Grid

**Editors: S. M. Mueeen & Saifur Rahman**  
The Petroleum Institute, UAE & VT Advanced Research Institute, USA

This book focuses specifically on security and control aspects of the smart grid. It covers various related topics including smart grid architecture; communications and networking features; measuring and sensing devices; and smart transmission and distribution. Particular emphasis is placed on security, reliability, and stability features. Different control aspects of smart grid are also covered. Each chapter includes examples, case studies, simulations and experimental results, making this a practical and essential resource for professional researchers and advanced students alike.



2017 | Hardback | 576pp | 978-1-78561-142-1  
PBP00950 | £120 • \$190

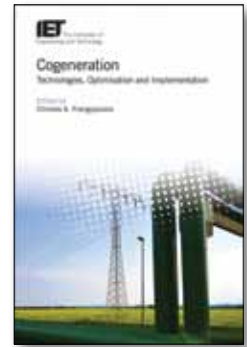


NEW

## Cogeneration: Technologies, optimisation and implementation

**Editor: Christos A. Frangopoulos**  
National Technical University of Athens, Greece

This book provides an integrated treatment of cogeneration – the simultaneous production of two or more useful forms of energy from the same primary energy source – including a tour of the available technologies and their features, how these systems can be analysed and optimised (with the formal application of mathematical optimisation at three levels - synthesis, design specifications and operation), and implementation issues such as economic, financial, environmental, and legal/regulation aspects. It includes case studies of cogeneration projects implemented in various sectors.



2017 | Hardback | 360pp | 978-1-78561-055-4  
PBP00870 | £120 • \$190

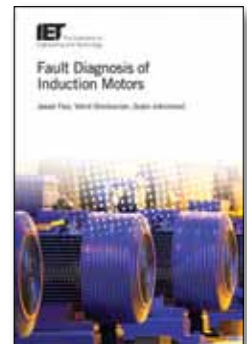


NEW

## Fault Diagnosis of Induction Motors

**Authors: Jawad Faiz et al.**  
University of Tehran, Iran

This book is a comprehensive, structural approach to fault diagnosis strategy, which will allow readers to select the right diagnosis strategy. The most important previously published works are reviewed, and potentials and limits of each approach are deeply discussed. The different fault types, signal processing techniques, and loss characterisation are also addressed in the book. This is essential reading for work with induction motors for transportation and energy.



2017 | Hardback | c.616pp | 978-1-78561-328-9  
PBP01080 | £120 • \$190



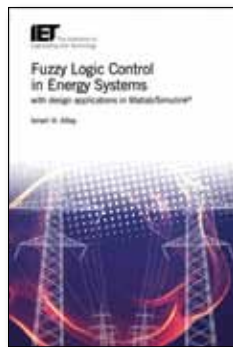


NEW

## Fuzzy Logic Control in Energy Systems with MATLAB®

**Author: İsmail Hakkı Altas**  
Karadeniz Technical University, Turkey

This book is about fuzzy logic control and its applications in managing, controlling and operating electrical energy systems. It aims to convey an understanding of design approaches to fuzzy logic controllers in MATLAB® and MATLAB/Simulink® environments. This book will enable readers to develop their own fuzzy processor library and fuzzy logic toolbox for the particular problems they study. This is an essential text for researchers and practising engineers working in power engineering and advanced students in the topic.



2017 | Hardback | 530pp | 978-1-78561-107-0  
PBP00910 | £120 • \$190

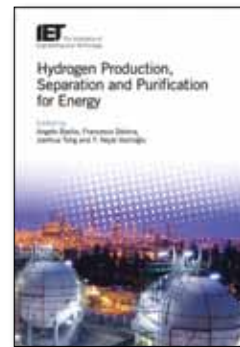


NEW

## Hydrogen Production, Separation and Purification for Energy

**Editors: Angelo Basile et al.**  
ITM-CNR, Italy

Hydrogen production is set to play an increasing role in a modern, clean energy system. It can be produced from clean energy, such as excess solar or wind energy, serving as a storage medium to help mitigate the intermittency of renewables. However, the ways to produce hydrogen to sufficient purity standards need to be developed further and made more efficient and cost effective. This book describes and discusses the current techniques and challenges for producing hydrogen. Researchers, advanced students and practising engineers will find this book of interest.



2017 | Hardback | 488pp | 978-1-78561-100-1  
PBP00890 | £105 • \$165

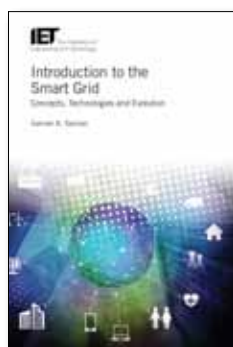


NEW

## Introduction to the Smart Grid: Concepts, technologies and evolution

**Author: Salman K. Salman**  
The Robert Gordon University, UK

The concept, evolution and technologies of the Smart Grid are discussed and explained in this comprehensive introduction to the subject. It identifies and discusses the tools required to ensure the interoperability among various digitally-based components of the Smart Grid. Additionally it covers the input of user groups and collaborative efforts within the power industry towards developments of interoperability standards. This book highlights and discusses the necessary tools, drivers and key technologies related to the Smart Grid with examples from ongoing projects.



2017 | Hardback | 304pp | 978-1-78561-119-3  
PBP00940 | £100 • \$160

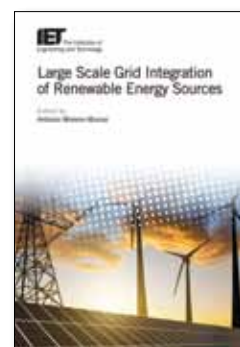


NEW

## Large Scale Grid Integration of Renewable Energy Sources

**Editor: Antonio Moreno-Munoz**  
University of Córdoba, Spain

This work presents comprehensive coverage of the means to integrate renewable power, namely wind and solar power. It looks at new approaches to meet the challenges, such as increasing interconnection capacity among geographical areas, hybridisation of different distributed energy resources and building up Demand Response capabilities. This book presents an overview of the steps on the way toward 100% clean power, covering approaches like micro-storage and demand response, prosumers and energy communities and including distribution systems and microgrids.



2017 | Hardback | 336pp | 978-1-78561-162-9  
PBP00980 | £100 • \$160



NEW

## Modeling and Dynamic Behaviour of Hydropower Plants

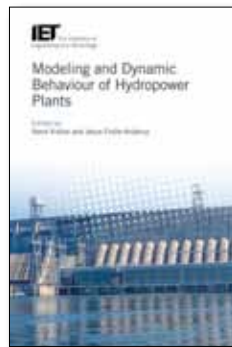
**Editors: Nand Kishor & Jesus Fraile-Ardanuy**

Motilal Nehru National Institute of Technology (MNNIT) Allahabad, India & Technical University of Madrid, Spain

Hydropower helps stabilise fluctuations between demand and supply; with the increase in shares of wind and photovoltaic energy, this role will become more important. This book presents a systematic approach to mathematical modeling of different configurations of hydropower plants, their simulation studies, and performance of controlled systems. It offers a focused critical insight into new trends for hydropower operation and control and addresses the fundamentals and latest concepts, providing the most appropriate solutions for cost-effective and reliable operation.



2017 | Hardback | 280pp | 978-1-78561-195-7  
PBP01000 | £120 • \$190



NEW

## Power Quality in Future Electrical Power Systems

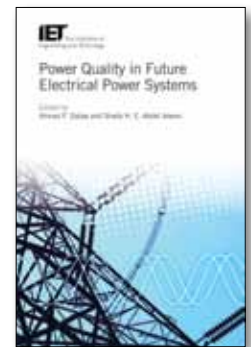
**Editors: Ahmed Faheem Zobaa & Shady H. E. Abdel Aleem**

Brunel University, UK & Higher Institute of Engineering, Egypt

This book highlights the recent developments in power systems that have led to new challenges in the power quality domain, such as large-scale renewable energy-based generation technologies. It also looks at the challenge of the advance of nonlinear loads, including the associated harmonic distortion and low voltage quality with additional transmission and distribution loss concerns. It highlights the problems, causes and effects, and presents the recent facilities of power conditioners that can effectively solve the problem.



2017 | Hardback | 440pp | 978-1-78561-123-0  
PBP00920 | £120 • \$190



NEW

## Power Transformer Condition Monitoring and Diagnosis

**Editor: Ahmed Abu-Siada**

Curtin University, Australia

This must-read book on power transformer monitoring will incorporate current power transformer condition monitoring techniques from principles to practice. Each chapter will cover the fundamentals and theory of the topic, convey techniques to measure relevant parameters, and assess or interpret the results. The book will include factory acceptance tests, receiving end pre-commissioning tests and commissioning tests. It will also include the limitations and challenges, and approaches to overcome these limitations.



2017 | Hardback | c.300pp | 978-1-78561-254-1  
PBP01040 | £100 • \$160



NEW

## Synchronized Phasor Measurements for Smart Grids

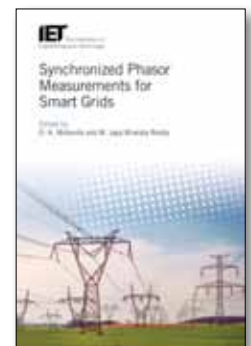
**Editors: M. Jaya Bharata Reddy & D. K. Mohanta**

NIT, India & BIT, India

The use of advanced technologies such as Phasor Measurement Units (PMUs) have made it possible to transform the power grid to an intelligent Smart Grid with real-time control and monitoring of the system. This book explores the application of PMUs in power systems, covering topics such as PMUs for improving power system performance; wide area measurement based power network protection; PMUs applications for load estimation and stability; state estimation in the presence of synchronized measurements; and PMUs based wide-area security assessment.



2017 | Hardback | 368pp | 978-1-78561-011-0  
PBP00970 | £110 • \$175




## Wave and Tidal Generation Devices: Reliability and availability

**Author: Peter Tavner**  
Durham University, UK

There are many wave and tidal devices under development but very few are actually in revenue-earning production. However, the engineering problems are gradually being solved and there is an appetite to invest in these technologies for harsher environments. *Wave and Tidal Generation Devices* combines the lessons from the wind industry to show engineers, students and researchers the main reliability and availability issues facing the growing ocean energy industry. This is essential reading for wave and tidal engineers and researchers and advanced students of renewable energy. It will also be invaluable to those working with wave and tidal devices.



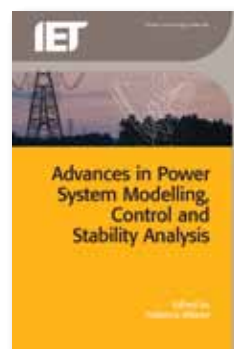
 2017 | Hardback | 304pp | 978-1-84919-734-2  
PBRN0180 | £90 • \$150




## Advances in Power System Modelling, Control and Stability Analysis

**Editor: Federico Milano**  
University College Dublin, Ireland

This book captures new methodologies and technologies changing the way modern electric power systems are modelled, simulated and operated. Part 1 covers power system modelling and applications of telegrapher equations, power flow analysis, discrete Fourier transformation and stochastic differential equations. Part 2 focuses on power system operation and control, optimal power flow, real-time control and state estimation techniques. Part 3 describes advances in the stability analysis of power systems and covers voltage stability, transient stability, time delays, and limit cycles.



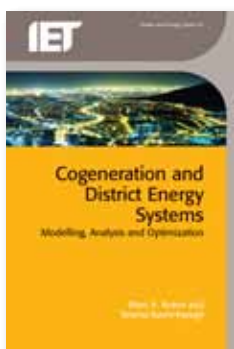
 2016 | Hardback | 496pp | 978-1-78561-001-1  
PBP00860 | £105 • \$170




## Cogeneration and District Energy Systems: Modelling, analysis and optimization

**Author: Marc A. Rosen**  
University of Ontario, Canada

District energy systems can be particularly beneficial when integrated with combined heat and power (CHP) plants. This important book covers district energy and CHP technologies, as well as the systems that combine them. It focuses on modelling, analysis and optimization of cogeneration-based district energy systems. This comprehensive overview provides an essential resource for engineers and researchers in a broad area including mechanical engineering, chemical engineering, energy engineering, environmental engineering, process engineering and industrial engineering.



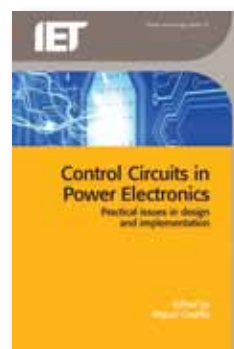
 2016 | Hardback | c.352pp | 978-1-78561-126-1  
PBP00930 | £110 • \$175




## Control Circuits in Power Electronics: Practical issues in design and implementation

**Editor: Miguel Castilla**  
Technical University of Catalonia, Spain

Control circuits are a key element in the operation and performance of power electronics converters. This practical guide describes practical issues related to the design and implementation of these control circuits, and is divided into three parts – analogue control circuits, digital control circuits, and new trends in control circuits. Each chapter focuses on the presentation of the state-of-the-art control solutions adopted for that application, including circuit technology, design techniques, and implementation issues.



 2016 | Hardback | 464pp | 978-1-84919-822-6  
PBP00720 | £95 • \$150



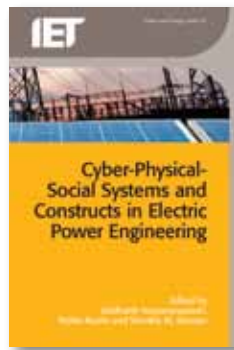
## Cyber-Physical-Social Systems and Constructs in Electric Power Engineering

**Editors: Siddharth Suryanarayanan et al.**  
Colorado State University, USA

Cyber-physical-social systems (CPSS) integrate computing, physical assets and human networks. This book describes state-of-the-art CPSS in electric power systems, including detailed approaches on social constructs which are a critical aspect of the end-user realm, and is divided into the three application areas of the electric grid. This book will be invaluable to academics and research-led professional engineers engaged in cyber-physical social system applications for power engineering.



2016 | Hardback | c.360pp | 978-1-84919-936-0  
PBP00810 | £110 • \$175



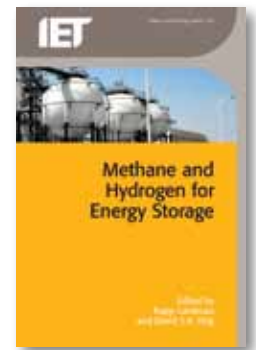
## Methane and Hydrogen for Energy Storage

**Editors: David S-K. Ting & Rupp Cariveau**  
University of Windsor, Canada

Methane and hydrogen are important energy carriers which are relatively clean compared to coal and oil, and are poised to play an important role in replacing these in a modern, low-emission energy system. This book explores some of leading advances in methane and hydrogen storage as well as the interesting link between these two important elements in our evolving energy system mosaic.



2016 | Hardback | 176pp | 978-1-78561-193-3  
PBP01010 | £90 • \$145



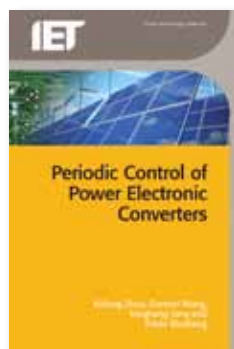
## Periodic Control of Power Electronic Converters

**Authors: Frede Blaabjerg et al.**  
Aalborg University, Denmark

Advanced power electronic converters convert, control and condition electricity. Power converters require control strategies for periodic signal compensation to assure good power quality and stable power system operation. This comprehensive text presents the most recent internal model principle based periodic control technology, which offers the perfect periodic control solution for power electronic conversion. It also provides analysis and synthesis methods for periodic control systems, and practical examples to demonstrate the validity of proposed technology for power converters.



2016 | Hardback | 264pp | 978-1-84919-932-2  
PBP00820 | £90 • \$145



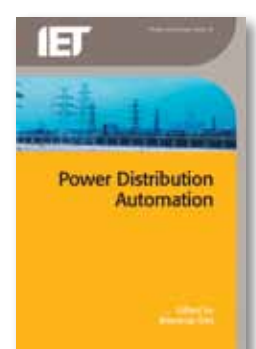
## Power Distribution Automation

**Editor: Biswarup Das**  
Indian Institute of Technology, India

Utilities around the world are under increasing pressure to provide reliable and good quality power supply to their retail customers, and to reduce their operational costs. This comprehensive book provides a detailed description of all the major components of a distribution automation system, including communication infrastructure and analysis tools, and includes extensive international case studies showing how the technology has been implemented in real-world situations.



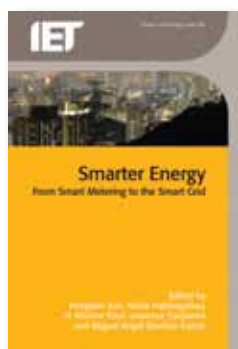
2016 | Hardback | 352pp | 978-1-84919-828-8  
PBP00750 | £90 • \$145




## Smarter Energy: From smart metering to the smart grid

**Editors: Hongjian Sun et al.**  
University of Durham, UK

This book presents cutting-edge perspectives and research results in smart energy. These span multiple disciplines including a variety of smart grid technologies and applications such as smart metering, energy management systems, demand side management, demand response, renewable energy integration, energy storage management, communication systems, and Internet of Things technologies. With contributions from an international team of leading experts, this is essential reading for researchers in academia and industry.



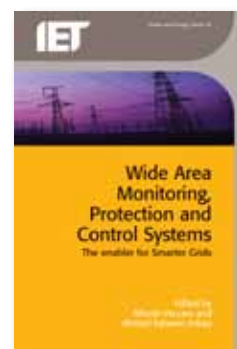
 **2016 | Hardback | c.512pp | 978-1-78561-104-9**  
**PBP00880 | £120 • \$190**




## Wide Area Monitoring, Protection and Control Systems: The enabler for smarter grids

**Editors: Alfredo Vaccaro & Ahmed Faheem Zobaa**  
University of Sannio, Italy & Brunel University, UK

This book is designed to give electrical and electronic engineers the knowledge and skills necessary to deploy synchronised measurement technology (SMT) in Wide Area Monitoring, Protection And Control (WAMPAC) applications. It focuses on technological breakthroughs and roadmaps in implementing synchronised measurement technology in WAMPAC applications, which aim to provide significant reliability and financial benefits in the planning, operation and maintenance of smarter power networks at both the distribution and transmission level.



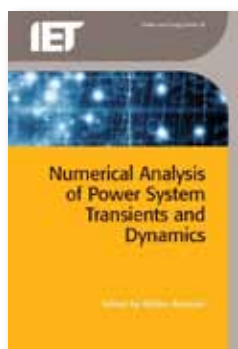
 **2016 | Hardback | 200pp | 978-1-84919-830-1**  
**PBP00730 | £85 • \$135**




## Numerical Analysis of Power System Transients and Dynamics

**Editor: Akihiro Ametani**  
The Polytechnique Montréal, Canada

The transient analysis of electrical networks has become very important for both HVAC and HVDC systems, due to significant changes introduced through the connection of renewable energy sources. This book describes the three major power system transient and dynamics simulation tools based on a circuit-theory approach which are most widely used all over the world (EMTP-ATP, EMTP-RV and EMTDC/PSCAD), together with another powerful simulation tool called the numerical electromagnetic analysis method.



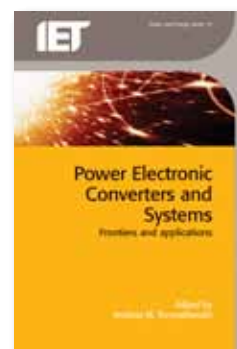
 **2015 | Hardback | 544pp | 978-1-84919-849-3**  
**PBP00780 | £90 • \$145**




## Power Electronic Converters and Systems: Frontiers and applications

**Editor: Andrzej M. Trzynadlowski**  
University of Nevada, USA

Power electronic systems are indispensable in adjustable speed drives, national smart power grids, electric and hybrid cars, electric locomotives and subway trains, renewable energy sources and distributed generation. With chapters written by specialists in their field, this is a comprehensive compendium of state-of-the-art knowledge related to recent advances in power electronic devices, converters and systems. It is essential reading for practising engineers and graduate students, specialising in the development and application of power electronic converters and systems.



 **2015 | Hardback | 638pp | 978-1-84919-826-4**  
**PBP00740 | £120 • \$190**





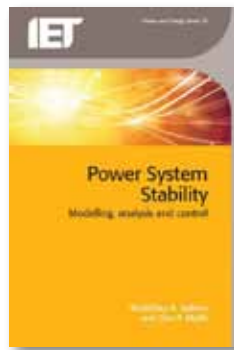
## Power System Stability: Modelling, analysis and control

**Authors:** Om P. Malik & Abdelhay A. Sallam  
University of Calgary, Canada & Port-Said University, Egypt

This title gives a comprehensive view of power system stability, covering both physical and mathematical perspectives. It features a range of topics including modelling, computation of load flow in the transmission grid, stability analysis under both steady-state and disturbed conditions, and appropriate controls to enhance stability. It also includes the development and physical real-time implementation of analytical and artificial intelligence based adaptive power system stabilisers to improve power system dynamic stability.



2015 | Hardback | 472pp | 978-1-84919-944-5  
PBP00760 | £105 • \$175



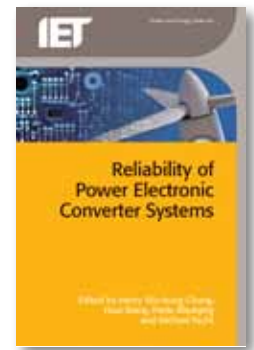
## Reliability of Power Electronic Converter Systems

**Editors:** Henry Shu-hung Chung et al.  
City University of Hong Kong, HK

The main aims of power electronic converter systems (PECs) are to control, convert, and condition electrical power flow, from one form to another, through the use of solid-state electronics. This book outlines R&D into the scientific modelling, experimentation and remedial measures for advancing the reliability, availability, system robustness, and maintainability of PECs at different levels of complexity. Drawing on the experience of international experts, it covers a variety of applications from low- and high-power motor drives to automotive applications.



2015 | Hardback | 504pp | 978-1-84919-901-8  
PBP00800 | £120 • \$190



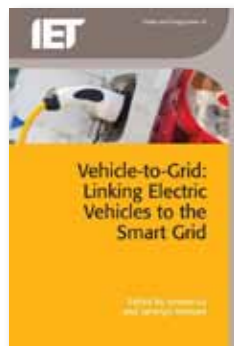
## Vehicle-to-Grid: Linking electric vehicles to the smart grid

**Editors:** Junwei Lu & Jahangir Hossain  
Griffith University, Australia

The idea of the smart grid is well-established, but the concept of using electric vehicles (EVs) to support smart grids is still new. EVs are an increasingly important energy store for smart grids in cities, but the batteries of EVs also need to be charged and ready for their users. This book is an integrated treatment of Vehicle-to-Grid (V2G) technology, ranging from power generation, through monitoring and storage in stationary and electric vehicle batteries, to control techniques. It will interest researchers and advanced students as well as policymakers and planners.



2015 | Hardback | 272pp | 978-1-84919-855-4  
PBP00790 | £80 • \$125



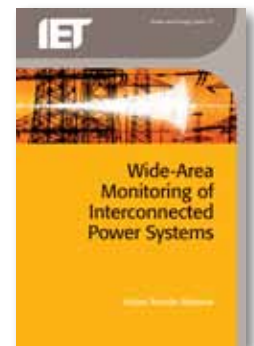
## Wide-Area Monitoring of Interconnected Power Systems

**Author:** Arturo Román Messina  
National Polytechnic Institute, Mexico

This is the first comprehensive, systematic account of advanced health monitoring and control systems, and near real-time power system analysis and security monitoring. It deals with the development and application of new analytical techniques, based on advanced signal processing methods and multi-scale, multi-temporal analysis tools, and the analysis, monitoring and control of wide-area phenomena in large interconnected power systems. It is suitable for advanced undergraduates, graduate students, researchers and utility engineers alike.



2015 | Hardback | 256pp | 978-1-84919-853-0  
PBP00770 | £90 • \$145



### Other IET Books related to Energy Engineering:

Product code	Title	Author(s)/Editor(s)	Page
PBTR0020	<b>Energy Systems for Electric and Hybrid Vehicles</b>	K.T. Chau	58
PBCS0330	<b>High Frequency MOSFET Gate Drivers: Technologies and applications</b>	Zhi-Liang Zhang & Yan-Fei Liu	41
PBCE1180	<b>Modeling, Simulation and Control of Electrical Drives</b>	M.F. Rahman & Sanjeet Kumar Dwivedi	8

## IET JOURNALS

### High Voltage

**Editors-in-Chief: Masoud Farzaneh and Zhicheng Guan**

Université du Québec à Chicoutimi, Canada and Tsinghua University, PR China

*High Voltage* aims to attract original research papers and review articles. The scope encompasses high-voltage power engineering and high voltage applications, including experimental, computational (simulation and modelling) and theoretical studies. It is a fully open access journal co-published with CEPRI (the China Electric Power Research Institute) and supported by Tsinghua University.

[www.ietdl.org/HVE](http://www.ietdl.org/HVE)



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NEW

## Biomedical Signal Processing: Respiratory signals

**Editor: Zahra M. K. Moussavi**  
University of Manitoba, Canada

This book explains how the mathematical tool of signal processing can be used to obtain the most meaningful analysis of biological signal outputs from the respiratory system. No other book covers this topic in such depth. Most chapters are co-authored by a biomedical engineer and expert from the medical community, making it accessible to both engineers and medical professionals in the field. Topics include spectral analysis of sounds, non-linear analysis of sounds, swallowing sound analysis, lung sounds and application to diagnoses.



Due Summer 2018 | Hardback | c.336pp | 978-1-78561-156-8  
PBHE0080 | £115 • \$185

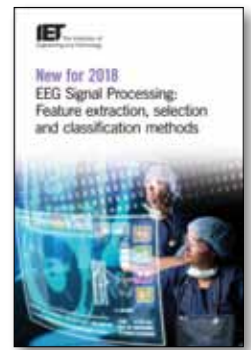


NEW

## EEG Signal Processing: Feature extraction, selection and classification methods

**Editor: Wai Yie LEONG**  
Taylor's University, Malaysia

This book focuses on the feature extraction methods used in Electroencephalographic (EEG) signal processing. It presents state-of-the-art aspects of EEG interpretation and the value of EEG; gives practical tips on interpretation and covers specific areas where EEG is most useful; and discusses how to report findings. It provides explanations of the EEG phenomena, gives a comprehensive review of EEG tracings and emphasises strategies, case studies and clinical practice. This book is ideal for readers in medical signal processing, biomedical engineering, bioinformatics and related fields.



Due Summer 2018 | Hardback | c.350pp | 978-1-78561-370-8  
PBHE0160 | £100 • \$160



NEW

## Engineering High Quality Medical Software: Regulations, standards, methodologies and tools for certification

**Author: Antonio Coronato**  
National Research Council of Italy, Italy

This one-stop reference focuses on high-confidence medical software in the growing field of e-health, telecare services and health technology. It covers the development of methodologies and engineering tasks together with standards and regulations for medical software. Key topics covered include configuration, design, verification and validation, risk management, testing and maintenance. This book is written for research-focused engineers, scientists and practitioners who focus on healthcare software and e-health platforms and technologies.



Due Winter 2018 | Hardback | c.420pp | 978-1-78561-248-0  
PBHE0120 | £100 • \$160



NEW

## Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video

**Editors: Christos P. Loizou et al.**  
Cyprus University of Technology, Cyprus

This is the first book to combine speckle imaging and video filtering and tracking, and their applications. It provides different levels of material to researchers interested in developing imaging and video systems with better quality by limiting the corruption of speckle noise in their systems. Supporting sample imaging and video datasets will also be made available on the web, as well as sample source codes of the algorithms presented in this book via a MATLAB® toolbox available to download from the editors' website.



Due Spring 2018 | Hardback | c.500pp | 978-1-78561-290-9  
PBHE0130 | £100 • \$160



NEW

## Integrative Modeling and Simulation Architecture for Value-based Learning Healthcare Systems

**Editors: Bernard P. Zeigler et al.**  
University of Arizona, USA

This book presents an innovative, unique and holistic approach to modeling and simulation approaches in healthcare management from leaders in computer modeling and simulation. From system architecture to modeling methodology, this book shows how to improve patient health and costs of care via the design and implementation of an efficient infrastructure. The framework, algorithms and methods are evaluated in real community environments. Researchers and professionals in health informatics, technology and policy will find this book invaluable.



The IET Book Series on e-Health Technologies



Due Summer 2018 | Hardback | c.450pp | 978-1-78561-326-5  
PBHE0150 | £100 • \$160



NEW

## Semiconductor Lasers and Diode-based Light Sources for Biophotonics

**Editors: Peter E. Andersen & Paul Michael Petersen**  
Technical University of Denmark, Denmark

From a team of international experts in the field, this reference takes readers from the fundamentals to the technologies and applications of bio-optics and biophotonics. It covers recent advances in semiconductor materials, visible and NIR lasers, LEDs, blue lasers, quantum cascade lasers, SDLs and their photochemical applications, near-IR imaging, Raman spectroscopy, and optical coherence tomography. Ideal for researchers and practitioners in medical optics, medical imaging, biophotonics, applied optics, and semiconductor and laser science.



Due Summer 2018 | Hardback | c.600pp | 978-1-78561-272-5  
PBHE0070 | £120 • \$190



NEW

## Enhanced Living Environments: From models to technologies

**Editors: Ciprian Dobre et al.**  
University Politehnica of Bucharest, Romania

This book offers a coherent and realistic image of architectures, techniques, protocols, and cloud-based solutions related to Ambient Assisted Living (AAL) and Enhanced Living Environments (ELE). It presents state-of-the-art technological solutions and supporting systems such as resource and data management, fault tolerance, security, monitoring and control. The book editors are part of The Enhanced Living Environments (ELE) project, which promotes the provision of infrastructures and services for autonomous living via the seamless integration of ICT within homes and residences.



The IET Book Series on e-Health Technologies



2017 | Hardback | c.355pp | 978-1-78561-211-4  
PBHE0100 | £100 • \$160



NEW

## Human Monitoring, Smart Health and Assisted Living: Techniques and technologies

**Editors: Sauro Longhi et al.**  
Università Politecnica delle Marche, Italy

This book explores the use of techniques and technologies within ICT for the improvement of human quality of life - encompassing patient monitoring, data analysis and assistive services. Also discussed are the future challenges to develop effective and efficient healthcare and assistive systems for our current and future society. The book offers an interdisciplinary approach to the study of human monitoring, smart health and assisted living, under a unifying point of view to improve Quality of Life Technology (QoLT).



The IET Book Series on e-Health Technologies



2017 | Hardback | 240pp | 978-1-78561-150-6  
PBHE0090 | £90 • \$145



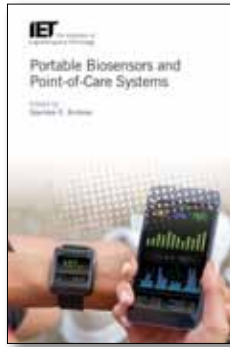
NEW

## Portable Biosensors and Point-of-Care Systems

**Editor: Spyridon E. Kintzios**

Agricultural University of Athens, Greece

With views from international experts providing a variety of perspectives, this book describes the principles, design and applications of a new generation of analytical and diagnostic biomedical devices, characterised by their very small size, ease of use, multi-analytical capabilities and speed to provide handheld and mobile point-of-care (POC) diagnostics. It covers topics such as the history, development, latest research and applications of portable biosensors, ranging from the support of primary healthcare to food and environmental safety screening.



2017 | Hardback | 384pp | 978-1-84919-962-9  
PBHE0030 | £125 • \$200



NEW

## Soft Robots for Healthcare Applications: Design, modelling and control

**Authors: Shane Xie et al.**

The University of Auckland, New Zealand

This book presents a systematic investigation of the design, modelling and control of soft robots actuated by PMAs. It includes a thorough review of the research in the field, and new insights into emerging technologies and developments for use in soft robots for healthcare. It also demonstrates applications of mechatronics to provide better clinical rehabilitation services. This book will provide biomedical engineering and robotics professionals and students with the fundamental mechatronics engineering knowledge to analyse and design new soft devices.



2017 | Hardback | 240pp | 978-1-78561-311-1  
PBHE0140 | £90 • \$145



## Active and Assisted Living: Technologies and applications

**Editors: Francisco Florez-Revuelta & Alexandros Andre Chaaraoui**

Kingston University, UK & University of Alicante, Spain

This is a broad introductory handbook, for academic and industry researchers, covering the major technologies and applications in Ambient Assisted Living (AAL). With contributions from around the world, topics covered include smart homes, environmental sensors and data fusion, wearable sensors, devices and smart clothes, standards and interoperability, computer vision for AAL, reasoning systems, assistive and service robotics, support for activities of daily living, mental health and cognitive stimulation, privacy and ethical issues.



2016 | Hardback | 496pp | 978-1-84919-987-2  
PBHE0060 | £110 • \$170

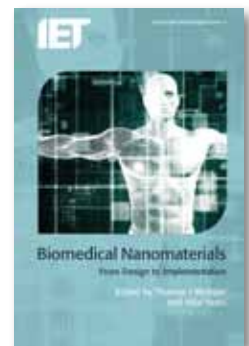


## Biomedical Nanomaterials: From design to implementation

**Editors: Thomas J. Webster & Hilal Yazici**

Northeastern University, USA & Istanbul Kultur University, Turkey

Nanomaterials are finding numerous uses in medicine including fighting cancer. *Biomedical Nanomaterials* brings together the engineering applications and challenges of using nanostructured surfaces and nanomaterials in healthcare in a single source. It is an invaluable resource and essential reading for researchers in industry and academia working at the interfaces of healthcare, engineering and nanotechnology. Topics covered include biomimetic coating, surface modifications and treatments, 3D biomaterials, nanobiomaterials, and bioactivity of nanomaterials.



2016 | Hardback | 352pp | 978-1-84919-964-3  
PBHE0040 | £105 • \$170






## Machine Learning for Healthcare Technologies

**Editor: David A. Clifton**  
University of Oxford, UK

This book brings together chapters on the state-of-the-art in machine learning (ML) as it applies to the development of patient-centred technologies, with a special emphasis on “big data” and mobile data. With contributions from international experts from prestigious institutions, it describes cutting edge research and makes accessible, for the first time, the latest in Bayesian non-parametrics for healthcare. This is one of the key frontiers in ML, and its application to healthcare will serve as a useful tutorial guide for both ML-focussed and biomedical engineers.



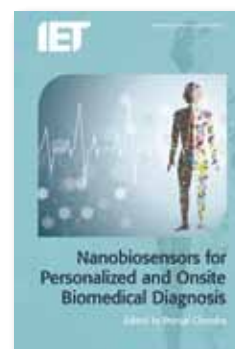
 2016 | Hardback | 320pp | 978-1-84919-978-0  
PBHE0020 | £95 • \$150




## Nanobiosensors for Personalized and Onsite Biomedical Diagnosis

**Editor: Pranjal Chandra**  
Indian Institute of Technology, Guwahati, India

This book focuses mainly on the emerging nanobiosensor technologies which are geared towards onsite clinical applications and those which can be used as a personalized diagnostic device. Written by an international team of researchers who are developing these technologies, *Nanobiosensors for Personalized and Onsite Biomedical Diagnosis* covers the latest advances in the field of biosensors and biosensing applications. This important book includes an assessment of some current and emerging technologies for detecting protein biomarkers and other potential cancer biomarkers.



 2016 | Hardback | 640pp | 978-1-84919-950-6  
PBHE0010 | £105 • \$175



### Other IET Books related to Healthcare Technologies:

Product code	Title	Author(s)/Editor(s)	Page
PBTE0650	<b>Advances in Body-Centric Wireless Communication: Applications and state-of-the-art</b>	Qammer H. Abbasi	54
PBCE1050	<b>Mechatronic Hands: Prosthetic and robotic design</b>	Paul H Chappell	12
PBCS0250	<b>Optical MEMS for Chemical Analysis and Biomedicine</b>	Hongrui Jiang	42
PBCE1000	<b>Organic Sensors: Materials and applications</b>	Eduardo Garcia-Breijo	12
PBCE1140	<b>Signal Processing and Machine Learning for Brain-Machine Interfaces</b>	Toshihisa Tanaka & Mahnaz Arvaneh	9
PBCE1080	<b>Wearable Exoskeleton Systems: Design, control and applications</b>	Shaoping Bai et al.	11

NEW

## Design of Terahertz CMOS Integrated Circuits for High-Speed Wireless Communication

**Authors: Minoru Fujishima & Shuhei Amakawa**

Hiroshima University, Japan

The book is the first to describe recent research on terahertz CMOS design for high-speed wireless communication in the post-5G world. The topics covered include fundamental technologies for terahertz CMOS design; theory and practical examples of building blocks; transceiver architectures; considerations for 300GHz-band communications; and future prospects. It is written by leading names in the field, this is a vital resource for researchers and professional circuit designers working in RFIC and CMOS design for telecommunications.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-387-6  
PBCS0350 | £90 • \$145



NEW

## Industrial Practices in System-on-Chip Design Verification, Validation and Testing

**Editor: C. P. Ravikumar**

Texas Instruments, India

This practical book provides a guide to industry best practice on various aspects of SoC (System-on-Chip) design verification, validation and testing. *Industrial Practices in System-on-Chip Design Verification, Validation and Testing* is edited by a highly respected name in the field, with wide experience from both academia and industry. The book also suggests ways to reduce cycle time and so accelerate the process of commercialising new SoC designs. This makes it ideal for professionals in research, design, development and testing of SoC technology. Academics and research students in the area will also find it invaluable.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-611-2  
PBCS0410 | £90 • \$145



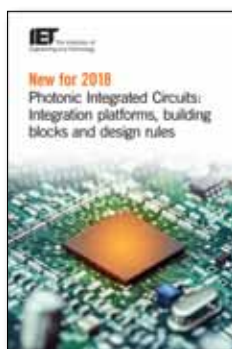
NEW

## Photonic Integrated Circuits: Integration platforms, building blocks and design rules

**Authors: Martijn Heck et al.**

Aarhus University, Denmark

This book provides an engineering approach to photonic integration technologies from fundamental concepts to integration strategies, combining different components in a single chip and assembly issues. It covers all three main platforms: PLC/silica/doped glass, silicon-on-insulator and indium phosphide. Selected real-world examples provide engineers with a feel for the technology's potential. It is ideal for photonics researchers in industry and academia as well as postgraduate students in electrical engineering, photonics and telecommunications.



Due Summer 2018 | Hardback | c.344pp | 978-1-78561-074-5  
PBCS0310 | £110 • \$175



NEW

## System Design with Memristor Technologies

**Authors: Lauren Guckert & Earl E. Swartzlander**

The University of Texas, Austin, USA

This book from two internationally acknowledged experts in the field covers recent developments in memristor fabrication, modelling, and applications, and explores research in the design and implementation of arithmetic units using memristors. The book's practical approach helps bridge the gap between laboratory-scale memristor development and potential applications in future computing. To make the material easier to understand and use, details of each design, simulation result and analysis are presented in terms of complexity, delay and power.



Due Spring 2018 | Hardback | c.300pp | 978-1-78561-561-0  
PBCS0380 | £100 • \$160



NEW

## High Frequency MOSFET Gate Drivers: Technologies and applications

**Authors: Zhi-Liang Zhang & Yan-Fei Liu**

Nanjing University of Aeronautics and Astronautics, China & Queen's University at Kingston, Ontario, Canada

This first book in this important class of power electronics devices describes advanced high frequency power MOSFET gate driver technologies, which serve a critical role between control and power devices. Topics covered include the state-of-the-art of power MOSFET drive techniques; switching loss modelling and optimal design methods; Current Source Drivers (CSDs) and their applications; and Resonant Gate Drivers and their applications. This is essential reading for researchers and advanced students in power electronics and electronic devices.



2017 | Hardback | 296pp | 978-1-78561-365-4  
PBCS0330 | £100 • \$160



## High Speed Data Converters

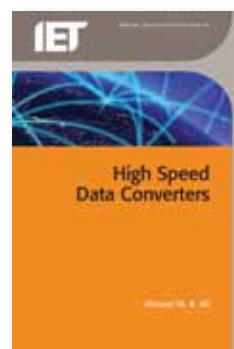
**Author: Ahmed M.A. Ali**

Analog Devices, Inc. USA

Written by a leading analogue-to-digital converter (ADC) designer, this book describes high speed Nyquist ADCs including architecture design, design methodology, circuit design techniques, problems, and trade offs. Topics covered include an introduction to high-speed data conversion; performance metrics; data converter architectures; sampling; comparators; amplifiers; pipelined A/D converters; time-interleaved converters; digitally assisted converters; evolution and trends.



2016 | Hardback | 464pp | 978-1-84919-938-4  
PBCS0260 | £110 • \$175



## Nano-CMOS and Post-CMOS Electronics: Devices and modelling

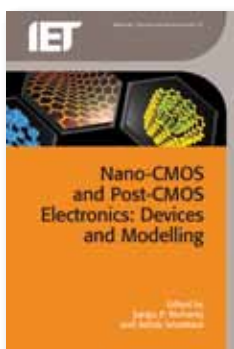
**Editors: Saraju P. Mohanty & Ashok Srivastava**

University of North Texas, USA  
& Louisiana State University, USA

The demand for ever smaller and more portable electronic devices has driven metal oxide semiconductor-based (CMOS) technology to its physical limit with the smallest possible feature sizes. To enable even smaller electronics, various nanodevices including carbon nanotube transistors, graphene transistors and memristors are emerging that could replace the traditional and ubiquitous silicon transistor. This first of two volumes describes the modelling, design, and implementation of nano-scaled CMOS electronics, and explores nanoelectronics at device level including modelling and design.



2016 | Hardback | 384pp | 978-1-84919-997-1  
PBCS0290 | £95 • \$150



## Nano-CMOS and Post-CMOS Electronics: Circuits and design

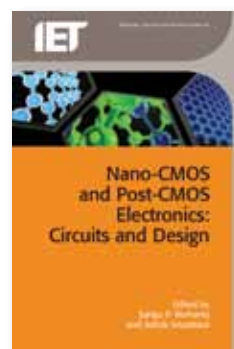
**Editors: Saraju P. Mohanty & Ashok Srivastava**

University of North Texas, USA  
& Louisiana State University, USA

A companion to *Devices and Modelling*, this volume outlines circuit and system level design approaches and issues for nano-CMOS and post-CMOS devices. Topics covered include self-healing analog/RF circuits; FinFET SRAM circuits; low leakage variability aware CMOS logic circuits; thermal effects in MWCNT VLSI interconnects; an accurate PVT-aware statistical logic library for nano-CMOS integrated circuits; SPICEless RTL design optimisation of nano-electronic digital integrated circuits; power-delay trade-off driven optimal scheduling of CDFGs during high level synthesis and 3D NoC – a promising alternative for tomorrow's nano-system design and DNA computing.



2016 | Hardback | 448pp | 978-1-84919-999-5  
PBCS0300 | £95 • \$150



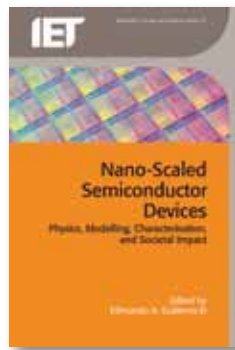
## Nano-Scaled Semiconductor Devices: Physics, modelling, characterisation, and societal impact

**Editor: Edmundo A. Gutiérrez-D.**  
INAOE, Mexico

The rapid evolution of integrated circuit technology has brought with it many new materials and processing steps at the nano-scale, which boost the electrical performance of devices and result in faster and more functionally-complex electronics. However, working at this reduced scale can bring second order effects that degrade efficiency and reliability. *Nano-Scaled Semiconductor Devices* describes methods for the characterisation, modelling, and simulation prediction of these second order effects in order to optimise performance and energy efficiency and identify new uses of nano-scaled semiconductor devices.



2016 | Hardback | 464pp | 978-1-84919-930-8  
PBCS0270 | £120 • \$190



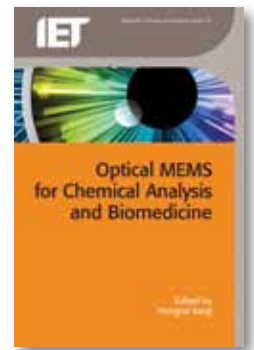
## Optical MEMS for Chemical Analysis and Biomedicine

**Editor: Hongrui Jiang**  
University of Wisconsin-Madison, USA

Optical MEMS are micro-electromechanical systems merged with micro-optics. They allow sensing or manipulating optical signals on a very small scale, using integrated mechanical, optical and electrical systems, and hold great promise in biomedical and other applications. This book describes the current state of optical MEMS in chemical and biomedical analysis, bringing together topics representing the most exciting progress made and current trends in the field in recent years.



2016 | Hardback | 496pp | 978-1-84919-897-4  
PBCS0250 | £100 • \$160



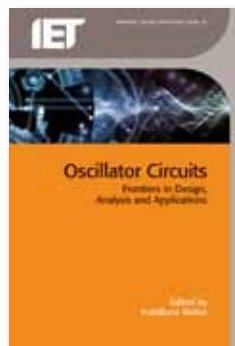
## Oscillator Circuits: Frontiers in design, analysis and applications

**Editor: Yoshifumi Nishio**  
Tokushima University, Japan

This book is a comprehensive volume on the most recent research on oscillator circuit design, analysis and applications. It highlights developments in the analysis of synchronisation and wave phenomena; new analytical and design methods and their application; and novel engineering applications of oscillator circuits. Covering various oscillatory circuits and their synchronisation, this is essential reading for researchers, students and designers working in circuit theory, analysis, design and applications.



2016 | Hardback | 336pp | 978-1-78561-057-8  
PBCS0320 | £110 • \$175



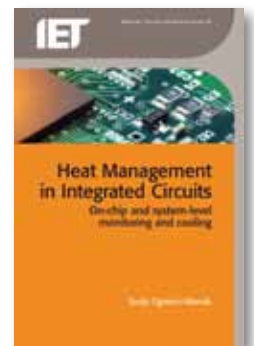
## Heat Management in Integrated Circuits: On-chip and system-level monitoring and cooling

**Author: Seda Ogrenci-Memik**  
Northwestern University, USA

This essential overview covers devices and circuits used to convert temperature to a digital measurement, heat to electricity, and actively biased circuits that reverse thermal gradients on chips for cooling. The scope includes fundamental operating principles, which touch upon the physics of materials, as well as the circuit and system design aspects that enable successful functioning of these devices as an on-chip system. Finally, it discusses the use of these devices and systems for thermal management of high performance computing systems.



2015 | Hardback | 264pp | 978-1-84919-934-6  
PBCS0280 | £105 • \$175



### Other IET Books related to Materials, Circuits & Devices:

Product code	Title	Author(s)/Editor(s)	Page
PBPO1200	<b>Applications of Fault Diagnosis for Inverter Power Drives</b>	Antonio Ginart	21
PBHE0040	<b>Biomedical Nanomaterials: From design to implementation</b>	Hilal Yazici & Thomas J Webster	38
PBPO1280	<b>Characterization of Wide Bandgap Power Semiconductor Devices</b>	Fei (Fred) Wang et al.	21
PBPO0720	<b>Control Circuits in Power Electronics: Practical issues in design and implementation</b>	Miguel Castilla	31
PBTR0120	<b>EMC and Functional Safety of Automotive Electronics</b>	Kai Borgeest	57
PBCE1030	<b>Microwave Gauging: Accurate sensing, measurement and monitoring in the industrial environment</b>	Nathan Ida	8
PBCE1060	<b>Motion-Induced Eddy Current Techniques for Non-Destructive Testing and Evaluation</b>	Hartmut Brauer et al.	9
PBCE1000	<b>Organic Sensors: Materials and applications</b>	Eduardo Garcia-Breijo	12
SBRA5160	<b>Photonics for Radar Networks and Electronic Warfare Systems</b>	Antonella Bogoni & Francesco Laghezza	45
PBPO0740	<b>Power Electronic Converters and Systems: Frontiers and applications</b>	Andrzej M. Trzynadlowski	33
PBPO0990	<b>Power Electronics Packaging Reliability</b>	C. Mark Johnson	25
PBPO0800	<b>Reliability of Power Electronic Converter Systems</b>	Henry Shu-hung Chung	34
PBCE1120	<b>RFID Protocol Design and Optimization for the Internet of Things</b>	Alex X. Liu	11
PBHE0070	<b>Semiconductor Lasers and Diode-based Light Sources for Biophotonics</b>	Peter E. Andersen & Paul Michael Petersen	37
PBCE1080	<b>Wearable Exoskeleton Systems: Design, control and applications</b>	Shaoping Bai et al.	11

## IET JOURNALS

### *IET Nanodielectrics*

**Editors-in-Chief: George Chen and Zhi-Min Dang**  
University of Southampton, UK and Tsinghua University, China

#### ***New open access journal, IET Nanodielectrics***

The IET is pleased to announce the launch of a new, fully Gold Open Access journal. *IET Nanodielectrics* aims to attract original research papers and surveys relating to the effects of nanoscale structure on the electrical polarization of insulating materials.

[www.ietdl.org/NDE](http://www.ietdl.org/NDE)





*“A must have for all radar researchers”*

# Novel Radar Techniques and Applications

## 2 Volume Set

**Editors: Richard Klemm, Ulrich Nickel, Christoph Gierull, Pierfrancesco Lombardo, Hugh Griffiths and Wolfgang Koch**

*Novel Radar Techniques and Applications* presents the state-of-the-art in advanced radar, with an emphasis on ongoing novel research and development and contributions from an international team of leading radar experts.

**Novel Radar Techniques and Applications  
Volume 1: Real Aperture Array Radar, Imaging Radar, and Passive and Multistatic Radar**

**Topics include:**

- Real aperture array radar
- Imaging radar
- Passive and multistatic radar

[www.theiet.org/books-novvol1](http://www.theiet.org/books-novvol1)

**Novel Radar Techniques and Applications  
Volume 2: Waveform Diversity and Cognitive Radar, and Target Tracking and Data Fusion**

**Topics include:**

- Waveform diversity and cognitive radar
- Target tracking and data fusion

[www.theiet.org/books-novvol2](http://www.theiet.org/books-novvol2)



**Publish date:** Autumn 2017

**Volume 1:**

Retail price: £130/\$195  
Hardback, c.928pp  
ISBN: 978-1-61353-225-6  
Product Code: SBRA512A

**Volume 2:**

Retail price: £130/\$195  
Hardback, c.528pp  
ISBN: 978-1-61353-226-3  
Product Code: SBRA512B

**2-Volume set:**

Retail price: £250/\$395  
Hardback, c.1456pp  
ISBN: 978-1-61353-229-4  
Product Code: SBRA512X

## Find out more

[www.theiet.org/books-nov2volset](http://www.theiet.org/books-nov2volset)

▶ Also see page 46.

NEW

## Ethical Decision-Making for Highly-Automated Military and Civilian Systems: A systems engineering approach

**Author: Anthony Gillespie**  
University College London, UK

Written for researchers and students of systems modelling in academia, industry and the military/defence sector, this is the first book on the emerging topic of ethical engineering for autonomous systems. It presents proven system engineering techniques, showing how generic engineering requirements can be derived from ethical/legal considerations and then turned into systems requirements. The book then shows how these requirements can be used as a basis for system procurement, engineering design and system testing.



Due Autumn 2018 | Hardback | c.300pp | 978-1-78561-372-2  
SBRA5170 | £100 • \$160

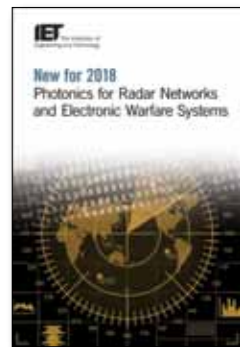


NEW

## Photonics for Radar Networks and Electronic Warfare Systems

**Editors: Antonella Bogoni & Francesco Laghezza**  
National Inter-university Consortium for Telecommunications, Italy

This is the first book to describe the potential for microwave photonics in radar and electronic warfare systems. It covers basic concepts and functions (RF transport in optical fibre, photonics-based RF signal generation/upconversion and analogue-to-digital conversion/downconversion, optical beam forming and optical RF filtering). It compares performance with conventional systems, describes their impact on digital signal processing, and explores integration issues. This book is essential reading for designers and researchers of radar and electronic warfare systems.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-376-0  
SBRA5160 | £90 • \$145



NEW

## Radar and Communication Spectrum Sharing

**Editors: Shannon D. Blunt & Erik S. Perrins**  
University of Kansas, USA

With contributions from a team of international experts, this is a broad survey of the latest work on spectrum sharing from a radar perspective. It examines many different avenues of current research and considers the electromagnetic, systems engineering and signal processing components of the problem. The book has an emphasis on identifying the technology gaps for practical realisation and regulatory and measurement compliance. Essential for researchers and engineers in radar, communications and other areas impacted by spectrum sharing.



Due Summer 2018 | Hardback | c.700pp | 978-1-78561-357-9  
SBRA5150 | £120 • \$195



NEW

## Tactical Persistent Surveillance Radar with Applications

**Author: David Lynch, Jr.**  
DL Sciences, Inc., Henderson, Nevada, USA

With case studies and software to help the reader, this comprehensive account of radar technologies in tactical surveillance comes from a pioneer of the field. It covers passive detection, radar detection, antenna monopulse, active electronic scanned antennas (AESA), moving target tracking (MTT), motion compensation, tactical target spectral characteristics, moving target detection (MTI), space time adaptive processing (STAP), synthetic aperture radar (SAR) imaging and details several technologies only recently released into the public domain.



Due Spring 2018 | Hardback | c.464pp | 978-1-78561-650-1  
SBRA5240 | £110 • \$160



NEW

## Biologically-Inspired Radar and Sonar: Lessons from nature

**Editors: Alessio Balleri et al.**  
Cranfield University, UK

Nature presents fascinating examples of active sensing, which is used in nature to carry out many different tasks such as navigation, collision avoidance and selection, identification and attack of prey. This book describes how these sophisticated natural sensing techniques can be applied to radar and sonar systems to improve their performance. With contributions from an international team of leading researchers, this is essential reading for radar and sonar practitioners in academia and research at governmental and industrial organisations.



2017 | Hardback | 272pp | 978-1-61353-235-5  
SBRA5140 | £100 • \$160



NEW

## The Impact of Cognition on Radar Technology

**Editors: Alfonso Farina et al.**  
Consultant

This book tackles the application of cognitive concepts to phased array radar systems for improved surveillance. It balances practical aspects with a rigorous mathematical approach and features many numerical study cases. The book also examines discoveries outside the radar community, such as breakthroughs in neuroscience. A list of common symbols, extensive cross-referencing and comprehensive references significantly enhance the book, making it invaluable as a reference for practitioners, academics and students in the area.



2017 | Hardback | c.312pp | 978-1-78561-580-1  
SBRA5200 | £100 • \$160



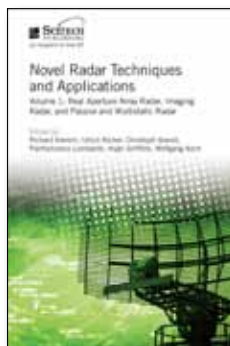
NEW

## Novel Radar Techniques and Applications

### Volume 1: Real aperture array radar, imaging radar, and passive and multistatic radar

**Editors: Richard Klemm, et al.**  
Fraunhofer Institute, Germany

*Novel Radar Techniques and Applications* presents the state-of-the-art in advanced radar, with an emphasis on ongoing novel research and development and contributions from an international team of leading radar experts. Each section gives an overview of the latest research and perspectives of the future, and includes a number of chapters dedicated to specific techniques in conjunction with existing operational, experimental or conceptual applications. Volume 1 covers: Real aperture array radar and imaging radar (SAR, ISAR).



2017 | Hardback | c.928pp | 978-1-61353-225-6  
SBRA512A | £130 • \$195



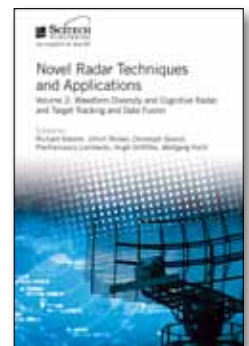
NEW

## Novel Radar Techniques and Applications

### Volume 2: Waveform diversity and cognitive radar, and target tracking and data fusion

**Editors: Richard Klemm, et al.**  
Fraunhofer Institute, Germany

*Novel Radar Techniques and Applications* presents the state-of-the-art in advanced radar, with an emphasis on ongoing novel research and development and contributions from an international team of leading radar experts. Each section gives an overview of the latest research and perspectives of the future, and includes a number of chapters dedicated to specific techniques in conjunction with existing operational, experimental or conceptual applications. Volume 2 covers: Passive and multistatic radar; waveform diversity and cognitive radar; and target tracking and data fusion.



2017 | Hardback | c.528pp | 978-1-61353-226-3  
SBRA512B | £130 • \$195



## Digital Techniques for Wideband Receivers

3rd Edition

**Authors: James Tsui & Chi-Hao Cheng**

Wright-Patterson AFB, USA & Miami University, USA

*Digital Techniques for Wideband Receivers* is widely recognised as the definitive design guide on digital processing work with today's complex receiver systems.

This third edition brings readers up-to-date with the latest information on wideband electronic warfare receivers, and includes new chapters on the detection of FM and BPSK radar signals, analog-to-information, time-reversal filter and monobit receivers with improved instantaneous dynamic range. As well as theory, the book offers practical solutions to real digital receiver problems.



2015 | Hardback | 608pp | 978-1-61353-217-1  
SBRA5110 | £85 • \$139



## Modern Radar Detection Theory

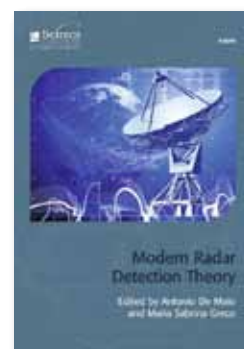
**Editors: Antonio De Maio  
& Maria Sabrina Greco**

University of Naples Federico II, Italy  
& University of Pisa, Italy

Written by top researchers and recognised leaders in the field, this is the first book to provide a comprehensive understanding of the current research trends in modern radar detection. Updating readers with the latest radar signal processing algorithms now capable with high-speed computer chips and sophisticated programs, *Modern Radar Detection Theory* also includes examples and applications from real systems. This is essential reading for radar systems design engineers within aerospace companies, military radar engineers, and aerospace consultants.



2015 | Hardback | 388pp | 978-1-61353-199-0  
SBRA5090 | £85 • \$139



## Other IET Books related to Radar, Sonar & Navigation:

Product code	Title	Author(s)/Editor(s)	Page
PBCE1150	<b>Ground Penetrating Radar: Improving sensing and imaging through numerical modeling</b>	Lucas Travassos & Nathan Ida	8
SBEW5230	<b>Radio Frequency Interference Pocket Guide</b>	Kenneth Wyatt & Michael Gruber	18
SBEW5240	<b>Scattering of Electromagnetic Waves by obstacles</b>	Gerhard Kristensson	17
PBTE0800	<b>Transceivers and System Design for Digital Communications, 5th Edition</b>	Scott R. Bullock	53

## IET JOURNALS

### *IET Radar, Sonar & Navigation*

**Editor-in-Chief: Professor Hugh Griffiths**

University College London, UK

*IET Radar, Sonar & Navigation* covers the theory and practice of systems involving the processing of signals for radar, radiolocation, radionavigation and surveillance purposes. Examples of the fields of application include: radar, sonar, electronic warfare, avionic and navigation systems.

[www.ietdl.org/IET-RSN](http://www.ietdl.org/IET-RSN)



NEW

## Authentication Technologies for Cloud Technology, IoT, and Big Data

**Editors: Yasser M. Alginahi & Muhammad N. Kabir**

Taibah University, Saudi Arabia & University Pahang Malaysia, Malaysia

This book covers state-of-art global research on authentication technologies for security and privacy in information systems, including applications, research challenges and future research directions. Topics include information security, data authentication algorithms, cryptography, digital watermarking, biometric authentication and data authentication. Essential for scientists, engineers and professionals involved in all aspects of authentication and information technology and systems security.



Due Autumn 2018 | Hardback | c.500pp | 978-1-78561-556-6  
PBSE0090 | £110 • \$175



NEW

## Hand-Based Biometrics: Methods and technology

**Editor: Martin Drahanský**

Brno University of Technology, Czech Republic

This book describes the complete biometrics of the hand, drawing on the latest research of its identifiable characteristics into one unique volume. It includes material on inner and outer hand physiology and diseases; fingerprint recognition and processing; palmprint recognition using 3D features; synthetic fingerprints; palmvein biometrics; finger veins recognition; 3D hand shape recognition; and anti-spoofing methods. Essential reading for researchers, engineers, practitioners, academics, product managers and government agencies in the security, biometrics and image processing fields.

The IET Book Series on Advances in Biometrics



Due Spring 2018 | Hardback | c.400pp | 978-1-78561-224-4  
PBSE0080 | £100 • \$160



NEW

## Information Security: Foundations, technologies and applications

**Editors: Ali Ismail Awad & Michael Fairhurst**

Luleå University of Technology, Sweden & University of Kent, UK

This book outlines key emerging trends in computational methods for information security. It will provide coverage of computing paradigms and technologies such as cryptography and cryptanalysis; biometrics-based identification and recognition; watermarking and stenography; software security assurance; physical and logical accesses; and cloud-based systems, with applications to surveillance, e-health, e-government, e-business, financial services, computer forensics, privacy and trust, cybersecurity and defence.



Due Spring 2018 | Hardback | c.456pp | 978-1-84919-974-2  
PBSE0010 | £115 • \$185



NEW

## Nature-Inspired Cyber Security and Resiliency: Fundamentals, techniques and applications

**Editors: El-Sayed M. El-Alf et al.**

King Fahd University of Petroleum and Minerals, Saudi Arabia

This is a timely review of the fundamentals, the latest developments and the diverse applications of nature-inspired algorithms in cyber security and resiliency. Based on concepts from natural processes, phenomena and organisms, it presents novel methodologies to cope with cyber security challenges. Coverage includes intrusion and malware detection, intelligent threat detection and traffic analysis, evolutionary and self-healing security systems, nature-inspired data protection, cooperative and self-configurable cyber defence, and more.



Due Autumn 2018 | Hardback | c.400pp | 978-1-78561-638-9  
PBSE0100 | £100 • \$160





NEW

## Security, Privacy and Trust in the Internet of Things

**Authors: Hannan Xiao & Ying Zhang**  
University of Hertfordshire, UK & Teledyne TSS Ltd., UK

This book provides a thorough, coherent explanation of security, privacy and trust issues for the Internet of Things (IoT). The authors go from the underpinning principles to the collective and different approaches, and cover applications, architectures and protocols. Each chapter features recommended reading, key terms, review questions and exercises, making it suitable for self-teaching as well as for courses. Perfect for engineering researchers, engineers, students and lecturers with an interest in internet security, privacy and trust.



 Due Autumn 2018 | Hardback | c.500pp | 978-1-78561-203-9  
PBSE0060 | £115 • \$185




NEW

## Data Security in Cloud Computing

**Editors: Vimal Kumar et al.**  
University of Waikato, New Zealand

This edited book covers a wide range of issues on data security in cloud computing. Many organisations have already embraced the idea of a centralised cloud, due to its benefits of economy, reliability and scalability. These benefits, however, are traded with the loss of control, since data is stored, computed upon and accessed on the cloud, which gives rise to a number of challenging data security issues. This one-stop reference is organised into six sections, covering all major aspects of securing data in cloud computing and data security challenges in emerging technologies such as the Internet of Things (IoT) and Bring Your Own Device (BYOD) technologies.



 2017 | Hardback | 328pp | 978-1-78561-220-6  
PBSE0070 | £100 • \$160

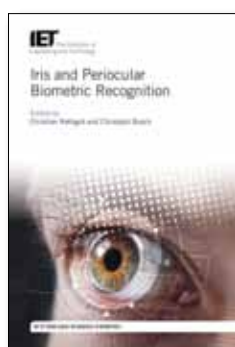


NEW


## Iris and Periocular Biometric Recognition

**Editors: Christian Rathgeb & Christoph Busch**  
Darmstadt University, Germany  
& Gjøvik University College, Norway

This book covers iris and periocular recognition, a prominent field in Biometrics Recognition and Identity Science in the areas of security, computing and communications research and technologies. Selected topics cover a wide spectrum of current research focusing on periocular recognition to augment the biometric performance of the iris in unconstrained environments, paving the way for multi-spectral biometric recognition on mobile devices. This text is divided into three parts to cover the most recent research and future directions as well as security related topics.



The IET Book Series on Advances in Biometrics

 2017 | Hardback | 496pp | 978-1-78561-168-1  
PBSE0050 | £120 • \$190

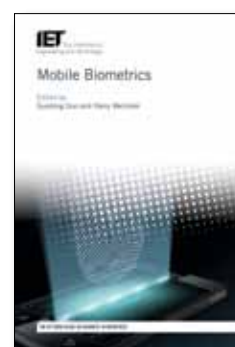


NEW


## Mobile Biometrics

**Editors: Guodong Guo & Harry Wechsler**  
West Virginia University, USA & George Mason University, USA

Mobile biometrics aims to achieve conventional functionality and robustness while also supporting portability and mobility, bringing greater convenience and opportunity for deployment in a wide range of operational environments. Achieving these aims brings new challenges, such as issues around algorithm complexity, device memory limitations and security. This book, the first substantial survey of its kind, aims to bring together high quality research addressing the new challenges of mobile biometrics.



The IET Book Series on Advances in Biometrics

 2017 | Hardback | 496pp | 978-1-78561-095-0  
PBSE0030 | £110 • \$175



NEW

## User-Centric Privacy and Security in Biometrics

**Editor: Claus Vielhauer**  
Brandenburg University, Germany

Biometrics is a growing field of influence and significance in the security, communications, networking and computing fields. This book covers the major and critical system security challenges, developments, techniques and applications for biometric systems (confidentiality, authenticity, integrity, privacy, reliability, convenience, usability). It includes state-of-the-art contributions from international experts in the field which survey and evaluate how biometric techniques can enhance and increase the reliability of security strategies in a variety of applications.

The IET Book Series on Advances in Biometrics



2017 | Hardback | c.390pp | 978-1-78561-207-7  
PBSE0040 | £120 • \$190



## Engineering Secure Internet of Things Systems

**Editors: Benjamin Aziz et al.**  
University of Portsmouth, UK

The Internet of Things (IoT) – the emerging global interconnection of billions of ‘smart’ devices - collects increasing amounts of private and sensitive data about our lives, and requires increasing degrees of reliability and trustworthiness in terms of the levels of assurance provided with respect to confidentiality, integrity and availability. This book examines these important security considerations for the IoT.



2016 | Hardback | 280pp | 978-1-78561-053-0  
PBSE0020 | £105 • \$165



### Other IET Books related to Security:

Product code	Title	Author(s)/Editor(s)	Page
PBTE0760	<b>Trusted Communications with Physical Layer Security for 5G and Beyond</b>	Trung Q. Duong	53
PBPC0130	<b>Trusted Platform Modules: Why, when and how to use them</b>	Ariel Segall	5

### IET BOOKS

#### Age Factors in Biometric Processing

**Editor: Professor Michael Fairhurst**  
University of Kent, UK

As biometric-based identification and identity authentication becomes increasingly widespread in their deployment, it becomes important to consider issues relating to reliability, usability and inclusion.

This book provides an overview of this topic for the rapidly expanding community of stakeholders in biometrics-based identification solutions in academia, industry and government.

[www.theiet.org/books-security](http://www.theiet.org/books-security)



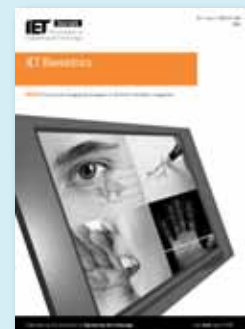
### IET JOURNALS

#### IET Biometrics

**Editor-in-Chief: Professor Michael Fairhurst**  
University of Kent, UK

*IET Biometrics* includes papers that increase our understanding of biometric systems, signal future developments and applications for biometrics, and/or promote greater practical uptake for relevant technologies.

[www.ietdl.org/IET-BMT](http://www.ietdl.org/IET-BMT)



NEW

## Digital Television Systems: Fundamentals & broadcast systems

**Editors: Stefan Mozar & Konstantin Glasman**

University of New South Wales, Australia  
& St Petersburg University of Film and Television, Russia

From a team of editors with substantial teaching experience and strong industry backgrounds, this is the first book in a multi-volume reference on digital television systems. This initial volume conveys everything from the fundamentals of Digital Television Systems through to broadcast systems, including error correction and compression of signals, cable and satellite transmission. Other volumes already under contract include Digital Television Reception and Transmission & Studios. This book is perfect for engineers working in broadcast media.



Due Winter 2018 | Hardback | c.350pp | 978-1-78561-250-3  
PBTE0750 | £100 • \$160



NEW

## Network Design, Modelling and Performance Evaluation

**Author: Quoc-Tuan Vien**

Middlesex University, UK

This book introduces a methodological approach to network design that enables readers to evaluate a network situation and identify the most important aspects to be monitored and analysed. It shows how to go from the analysis of initial network requirements to the network architecture design, modelling, simulation and evaluation. Practice exercises are given for selected chapters, and case studies take the reader through the whole network design process. Ideal for practitioners and researchers working in all aspects of network services.



Due Autumn 2018 | Hardback | c.500pp | 978-1-78561-336-4  
PBTE0770 | £110 • \$175



NEW

## Next Generation Integrated Satellite and Terrestrial Communication

**Editors: Shree Krishna Sharma et al.**

University of Western Ontario, Canada

This title covers state-of-the-art research, challenges and future perspectives in the field of satellite communications. It starts with integrated/hybrid satellite-terrestrial networks, and covers applications in areas such as transport, energy, health, environment, manufacturing, food production and disaster support. It then focuses on emerging technologies for next-generation systems and covers a selection of hot topics. It is ideal for telecommunications engineers and researchers who require a structured guide to the latest advances in the area.



Due Summer 2018 | Hardback | c.500pp | 978-1-78561-427-9  
PBTE0790 | £110 • \$175



NEW

## Resilience in Wireless Networks

**Author: Prashant Krishnamurthy**

University of Pittsburgh, USA

The book presents a unified view of current research on resilience in wireless networks. The first title to cover network resilience at the advanced level, it covers both network infrastructure and ad hoc topologies, and illustrates the latest issues, challenges, and solution approaches. It provides practical examples of real-life attacks and diagnostic tools to improve future network resilience, making it an ideal reference for researchers and professionals in IT security and resilience.



Due Summer 2018 | Hardback | c.288pp | 978-1-84919-790-8  
PBTE0620 | £85 • \$140

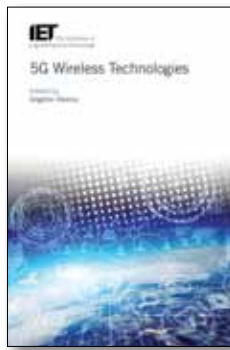


NEW

## 5G Wireless Technologies

**Editor: Angeliki Alexiou**  
University of Piraeus, Greece

Mobile data traffic is expected to exceed traffic from wired devices by 2018. This emerging future will be empowered by revolutionary 5G radio network technologies with a focus on application-driven connectivity, transparently deployed over various technologies, infrastructures, users and devices to give a vision of 'the internet of everything'. This book presents a roadmap of 5G, presenting advanced radio technologies, innovative resource management approaches and novel architectures.



2017 | Hardback | 416pp | 978-1-78561-061-5  
PBTE0690 | £100 • \$160

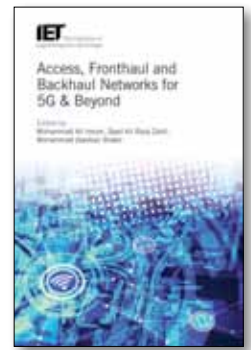


NEW

## Access, Fronthaul and Backhaul Networks for 5G & Beyond

**Editors: Muhammad Ali Imran, et al.**  
University of Glasgow, UK

*Access, Fronthaul and Backhaul Networks for 5G & Beyond* covers a growing and thriving topic among the wireless, mobile, networking and computing communications community. A one-stop reference for state-of-the-art access, backhaul and fronthaul technologies for 5G and beyond, it also serves as a unique platform for both academic and industrial stakeholders to report and present innovation, covering a wide spectrum of underlying themes from the recent thrust in edge caching for backhaul relaxation to millimetre-wave based fronthauling for virtualised radio access.



2017 | Hardback | 584pp | 978-1-78561-213-8  
PBTE0740 | £110 • \$175



NEW

## Cloud and Fog Computing in 5G Mobile Networks: Emerging advances and applications

**Editors: Evangelos Markakis et al.**  
Technological Educational Institute of Crete, Greece

Cloud computing, a key trend in networking, shows that availability and fault tolerance issues can directly impact on millions of end-users. Now diffused among end-users devices in mobile and wired networks, the cloud is becoming the "fog". This book elaborates on a new paradigm by presenting frameworks and schemes that use end-user or near-user edge devices to carry out storage, communication, computation and control in the network. Topics covered include network storage, the Internet of Things and heterogeneous 5G mobile services.



2017 | Hardback | 440pp | 978-1-78561-083-7  
PBTE0700 | £90 • \$145.00

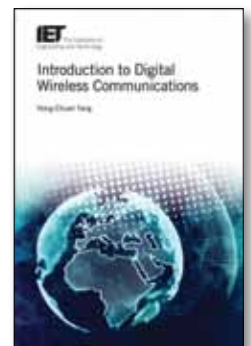


NEW

## Introduction to Digital Wireless Communications

**Author: Hong-Chuan Yang**  
University of Victoria, Canada

This book provides an introduction to advanced wireless transmission technologies in current and future wireless communication systems. It will help students and engineers with basic communication knowledge to quickly understand the principles and trade-offs involved in these digital wireless transmission technologies, start performing academic research in the field, and carry out product development. The material is presented without assuming an extensive background knowledge of digital communications. It also includes carefully designed problem-solving examples.



2017 | Hardback | 288pp | 978-1-78561-160-5  
PBTE0720 | £75 • \$120



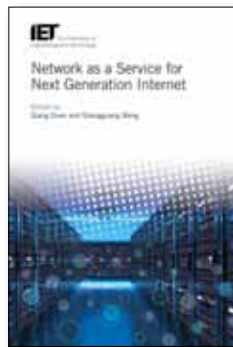
NEW

## Network as a Service for Next Generation Internet

**Editors: Qiang Duan & Shangguang Wang**

Pennsylvania State University, USA & Beijing University, China

Flexible and effective service provisioning for supporting diverse applications is a key requirement for the next generation Internet. However, the current Internet lacks sufficient capability for meeting this requirement. Network-as-a-Service (NaaS) offers a promising approach to separating network architecture and infrastructure to make this possible and has been widely adopted in Cloud computing. This book provides a comprehensive survey of NaaS technologies, trends, applications and future directions for network service provisioning.



2017 | Hardback | 440pp | 978-1-78561-176-6  
PBTE0730 | £100 • \$160



NEW

## Transceivers and System Design for Digital Communications

5th Edition

**Author: Scott R. Bullock**

With nearly 20% new material, this is the thoroughly revised, updated and expanded new edition of the classic text on transceiver and system design for digital communications. Most of the chapters have been updated with new material, and there are now several new chapters. Topics covered include cognitive systems; radar communication; volume search, acquisition and track; optimal waveform CP-PSK; AGC design methods; jammers; GPS; interferometry; error correction and detection; and transceiver design and RF components.



2017 | Hardback | c.568pp | 978-1-78561-495-8  
PBTE0800 | £120 • \$190



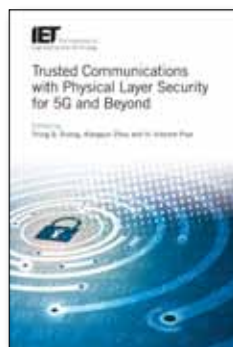
NEW

## Trusted Communications with Physical Layer Security for 5G and Beyond

**Editors: Trung Q. Duong et al.**

Queen's University Belfast, UK

This book provides readers with comprehensive insights into the theory, models and techniques of Physical Layer Security and its applications in 5G and other emerging wireless networks. It covers recent advances in wireless communication and PHY security for 5G networks and beyond, including IoT, cognitive radio networks, massive MIMO, device-to-device communications, mm-wave communications, and energy harvesting communications. The potential of Physical Layer Security with a view to designing more secure communications in advanced networks of the future is also explored.



2017 | Hardback | c.529pp | 978-1-78561-235-0  
PBTE0760 | £90 • \$145



NEW

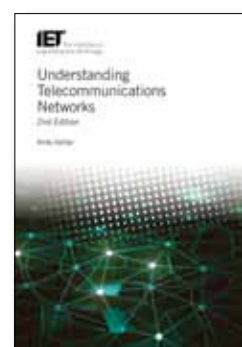
## Understanding Telecommunications Networks

2nd Edition

**Author: Andy Valdar**

University College London, UK

This fully revised, updated and expanded second edition incorporates updates on key and new areas of technology, which have developed since the original book was published in 2006. It provides a comprehensive explanation of how various systems and technologies link together to construct networks and provide services. This book complements *Understanding Telecommunications Business* (2015).



2017 | Hardback | 416pp | 978-1-78561-164-3  
PBTE0710 | £50 • \$80





## Advanced Relay Technologies in Next Generation Wireless Communications

**Editors: Ioannis Krikidis & Gan Zheng**  
University of Cyprus, Cyprus & University of Essex, UK

*Advanced Relay Technologies in Next Generation Wireless Communications* describes the use of the highly successful cooperative networks/relaying approach in new and emerging telecommunications technologies such as full-duplex radio, massive multiple-input multiple-output (MIMO), network coding and spatial modulation, and new application areas including visible light communications (VLC), wireless power transfer, and 5G.



2016 | Hardback | 536pp | 978-1-78561-003-5  
PBTE0680 | £105 • \$170



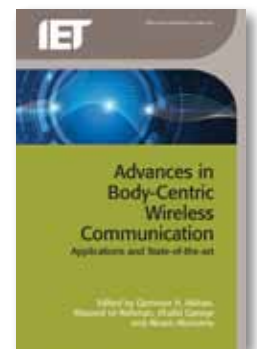
## Advances in Body-Centric Wireless Communication: Applications and state-of-the-art

**Editors: Qammer H. Abbasi et al.**  
Queen Mary University, UK

This book brings together contributions from a multidisciplinary team of researchers in the field of wireless and mobile communications, signal processing and medical measurements to present the underlying theory, implementation challenges and applications of this exciting new technology that has applications in healthcare, surveillance, communication and emergency services.



2016 | Hardback | 456pp | 978-1-84919-989-6  
PBTE0650 | £95 • \$150



## Cognitive Radio Engineering

**Authors: Charles W. Bostian et al.**  
Virginia Tech, USA

This book is both a text and a reference book about cognitive radio architecture and implementation. Intended for readers who want to design and build working cognitive radios, it provides a practical approach that differs from many existing titles that postulate and analyse or simulate ideal cognitive radios without considering how to build working prototypes. Written by acknowledged experts in the field who have built working cognitive radio systems, this book is essential reading for communications engineers working in academia or industry.

Mario Boella Series on Electromagnetism in Information & Communication



2016 | Hardback | 264pp | 978-1-61353-211-9  
SBTE5020 | £75 • \$120



## Managing the Internet of Things: Architectures, theories and applications

**Editors: Jun Huang & Kun Hua**  
Chongqing University, China & Lawrence Technological University, USA

The Internet of Things (IoT) refers to the evolution of the internet as the interconnection not just of computers, but also uniquely identifiable, pervasive embedded devices. Research has estimated there will be nearly 30 billion devices on the IoT by 2020. The implementation and deployment of the IoT brings with it management challenges around seamless integration, heterogeneity, scalability, mobility, security, and many other issues. This book explores these challenges and possible solutions.



2016 | Hardback | 224pp | 978-1-78561-028-8  
PBTE0670 | £95 • \$145



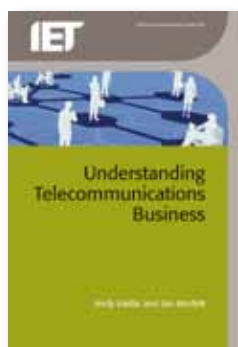
## Understanding Telecommunications Business

**Authors: Andy Valdar & Ian Morfett**  
University College London, UK & Lister Hospital, UK

This companion volume to the book *Understanding Telecommunications Networks, 2nd Edition*, is of interest to undergraduate and graduate students studying engineering, computing and telecommunications, and practitioners in industry. Topics covered include: introduction to the telecommunications business; regulation; business strategy; corporate finance and governance; network strategy and planning; customers and marketing; product management; network economics; network and service operations and company dynamics.



2015 | Paperback | 440pp | 978-1-84919-745-8  
PBTE0600 | £45 • \$75



## IET JOURNALS

### IET Communications

**Editor-in-Chief: Professor Xuemin (Sherman) Shen**  
University of Waterloo, Canada

*IET Communications* covers the fundamental and generic research into technologies to harness signals for better performing communication systems using various wired and/or wireless media. This journal is particularly interested in research papers reporting novel solutions to the dominating problems of noise, interference, timing and errors for the reduction of systems deficiencies such as the wastage of spectra, energy and bandwidth.



[www.ietdl.org/IET-COM](http://www.ietdl.org/IET-COM)



## Planning to write an engineering book in 2018?

To help you while you write your book, we have launched Information for Authors, a single online resource where you can find all the information you need to help you write a book with the IET. The site covers everything from proposal to publication, including style guides, submission guidelines, FAQs, resources and general guidance for managing your book project.

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- Everything you need to know about publishing your work
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### Other IET Books related to IET Telecommunications:

Product code	Title	Author(s)/Editor(s)	Page
PBHE0060	<b>Active and Assisted Living: Technologies and applications</b>	Francisco Florez-Revuelta & Alexandros Andre Chaaraoui	38
PBSE0090	<b>Authentication Technologies for Cloud Technology, IoT, and Big Data</b>	Yasser M. Alginahi & Muhammad N. Kabir	48
PBPC0150	<b>Big Data and Software Defined Networks</b>	Javid Taheri	4
PBSE0070	<b>Data Security in Cloud Computing</b>	Vimal Kumar et al.	49
PBCS0350	<b>Design of Terahertz CMOS Integrated Circuits for High-Speed Wireless Communication</b>	Minoru Fujishima & Shuhei Amakawa	40
SBRA5110	<b>Digital Techniques for Wideband Receivers, 3rd Edition</b>	James Tsui & Chi-Hao Cheng	47
PBHE0120	<b>Engineering High Quality Medical Software: Regulations, standards, methodologies and tools for certification</b>	Antonio Coronato	36
PBSE0020	<b>Engineering Secure Internet of Things Systems</b>	Benjamin Aziz	50
PBHE0100	<b>Enhanced Living Environments: From models to technologies</b>	Ciprian Dobre	37
PBSE0080	<b>Hand-Based Biometrics: Methods and technology</b>	Martin Drahanský	48
PBHE0020	<b>Machine Learning for Healthcare Technologies</b>	David A. Clifton	39
PBSE0030	<b>Mobile Biometrics</b>	Guodong Guo & Harry Wechsler	49
PBPC0180	<b>Modeling and Simulation of Complex Networks</b>	Muaz A. Niazi	4
PBPC0170	<b>Parallel and Distributed Simulations for Big Data Processing</b>	Asad W. Malik	4
SBRA5160	<b>Photonics for Radar Networks and Electronic Warfare Systems</b>	Antonella Bogoni & Francesco Laghezza	45
PBPO1320	<b>Power Line Communication Systems for Smart Grids</b>	Ivan Roberto Santana Casella & Alagan Anpalagan	25
SBRA5150	<b>Radar and Communication Spectrum Sharing</b>	Shannon D. Blunt & Erik S. Perrins	45
SBEW5230	<b>Radio Frequency Interference Pocket Guide</b>	Kenneth Wyatt & Michael Gruber	18
PBSE0060	<b>Security, Privacy and Trust in the Internet of Things</b>	Hannan Xiao & Ying Zhang	49

NEW

## Automated Road Vehicle Longitudinal Control: Modelling, control design, implementation and field testing

**Author: Xiao-Yun Lu**

University of California, Berkeley, USA

Using the world-leading approach of California Partners for Advanced Transportation Technology (PATH), this book explains the concepts of road vehicle longitudinal control and clarifies common misconceptions. It conveys lessons learned and experiences gained from commercial truck traffic, including results of the latest field tests. An essential read for researchers and engineers involved with automated vehicle control, and a valuable resource for professionals in road transportation, vehicle and highway automation and wireless communication.



Due Autumn 2018 | Hardback | c.450pp | 978-1-78561-308-1  
PBTR0100 | £100 • \$160



NEW

## Autonomous Decentralized Systems and their Applications in Transport and Infrastructure

**Editors: Kinji Mori & Takashi Kunifuji**

Waseda University, Japan & East Japan Railway Company, Japan

With many authors from industry, this is a comprehensive work on Autonomous Decentralized Systems (ADS) technology in transportation. It describes the chain of technologies, applications and businesses needed to create a consistent concept for achieving sustainable, intelligent transport. Coming from the inventor of ADS in Japan, the book describes ADS applications in intelligent railway transport using the example of the Japanese railway transport system. Ideal for researchers involved with railway transportation systems.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-281-7  
PBTR0090 | £100 • \$160



NEW

## Computational Traffic Flow Modelling and Control

**Author: Apostolos Kotsialos**

Durham University, UK

In this book, the author conveys a key way to address increased urban road congestion, with traffic flow modelling, using microscopic and macroscopic approaches. Using code samples in C, the book guides readers through examples and modelling problems, and explains how to use the traffic simulators that are freely available. The book also looks ahead, to potential future issues, making it a book that professional engineers and researchers, computer scientists and applied mathematicians in intelligent transport systems will use for years to come.



Due Summer 2018 | Hardback | c.400pp | 978-1-78561-166-7  
PBTR0030 | £120 • \$190



NEW

## EMC and Functional Safety of Automotive Electronics

**Author: Kai Borgeest**

Aschaffenburg University of Applied Sciences, Germany

This systematic treatment of electromagnetic compatibility (EMC) for the automotive sector introduces automotive experts to EMC and EMC experts to automotive electronics.

The book enables readers to avoid expensive EMC problems, to test for EMC compliance of cars and their components, and to fix existing EMC issues. It also deals with the legal frameworks around the topic. In addition, the book explicitly covers electric vehicle technology and infrastructure. Ideal for researchers, advanced students and engineers in automotive electronics.



Due Summer 2018 | Hardback | c.250pp | 978-1-78561-408-8  
PBTR0120 | £100 • \$160



NEW

## Road Pricing: Technologies, economics and acceptability

Editor: John Walker

Delivering the current state of research on road pricing, this book informs engineers and planners how to prepare for, model and implement such schemes. It explains which technologies to use, as well as the economics and acceptability of road pricing, and includes several case studies from various countries. Written by international authors from academia, industry and government, this is an essential guide to the topic for researchers and advanced students working in transportation.



Due Winter 2018 | Hardback | c.648pp | 978-1-78561-205-3  
PBTR0080 | £120 • \$190



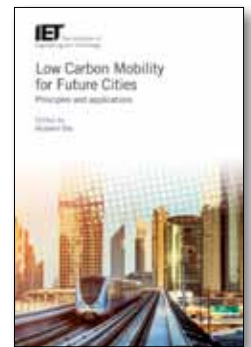
NEW

## Low Carbon Mobility for Future Cities: Principles and applications

Editor: Hussein Dia

Swinburne University of Technology,  
Australia

Taking the global view of the interactions between land use and transport this book brings together leading experts in the areas of urban planning, transport planning and strategy, traffic management and transport technology to present a cohesive work on the policy principles and practical applications to drive urban mobility services in tomorrow's smart cities. Containing practical policy instruments and proven use cases, this book combines academic rigor with practical tools to benefit practitioners and city leaders.



2017 | Hardback | 376pp | 978-1-78561-197-1  
PBTR0060 | £105 • \$170



NEW

## Sliding Mode Control of Vehicle Dynamics

Editor: Antonella Ferrara

University of Pavia, Italy

This book is a comprehensive work on vehicle dynamics control through sliding mode control. This edited volume covers the control of longitudinal, lateral and vertical dynamics of four-wheeled vehicles, both of conventional (i.e. combustion driven) type as well as fully-electric. In addition, one chapter is devoted to motorcycles, and one to the roll-over control in heavy vehicles. The topic is important not only for general safety of vehicular traffic, but also for future automated driving. This book is a must-read for both researchers and industry engineers in this field.



2017 | Hardback | 312pp | 978-1-78561-209-1  
PBTR0050 | £100 • \$160

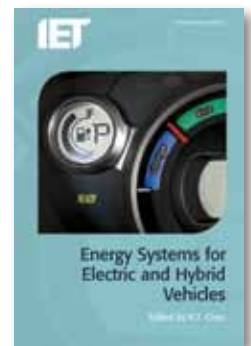


## Energy Systems for Electric and Hybrid Vehicles

Editor: K.T. Chau

The University of Hong Kong, HK

The book provides thorough coverage of energy systems for electric and hybrid vehicles with a focus on the three main energy system technologies – energy sources, battery charging and vehicle-to-grid systems. Energy sources include electrochemical energy sources, electromechanical energy storage, hybrid energy sources, on-board solar energy harvesting, on-board thermoelectric energy recovery, and battery management.



2016 | Hardback | 520pp | 978-1-78561-008-0  
PBTR0020 | £110 • \$175

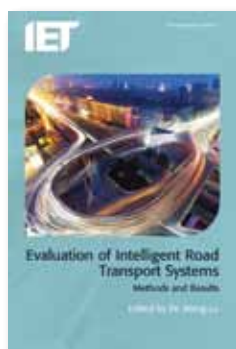





## Evaluation of Intelligent Road Transport Systems: Methods and results

**Editor: Meng Lu**  
IBEC, Belgium

Intelligent Transport Systems (ITS) use information and communications technologies (ICT) to deliver transport improvements instead of extending physical infrastructure, thereby saving money and reducing environmental impact. This book provides a unique overview of ICT-based intelligent road transport systems with an emphasis on evaluation methods and recent evaluation results of ITS development and deployment. Case studies from various countries and methodology are also used to derive lessons.



 **2016 | Hardback | 456pp | 978-1-78561-172-8**  
**PBTR0070 | £105 • \$170**




## Clean Mobility and Intelligent Transport Systems

**Editors: Michele Fiorini & Jia-Chin Lin**  
Selex ES, Italy & National Central University, Taiwan

This book provides an important overview of current topics in intelligent transport systems and clean mobility. Edited by two experts in the field, this book covers the full spectrum of transport from land to sea and aircraft, and includes some research from the economic and human sciences. *Clean Mobility and Intelligent Transport Systems* covers topics such as ICT for intelligent public transport systems; ITS and freight transport; steel and the green cars initiative; cooperative collision warning for vehicles; electronic toll collection systems; multisensor maritime surveillance; and aeronautical air-ground communications.



 **2015 | Hardback | 464pp | 978-1-84919-895-0**  
**PBTR0010 | £90 • \$145**



### Other IET Books related to Transportation:

Product code	Title	Author(s)/Editor(s)	Page
PBPO1200	<b>Applications of Fault Diagnosis for Inverter Power Drives</b>	Antonio Ginart	21
PBPO1260	<b>Diagnosis and Fault Tolerance of Electrical Machines and Power Electronics</b>	Antonio J. Marques Cardoso	22
SBRA5170	<b>Ethical Decision-Making for Highly-Automated Military and Civilian Systems: A systems engineering approach</b>	Anthony Gillespie	45
PBPO1080	<b>Fault Diagnosis of Induction Motors</b>	Jawad Faiz	28
PBPO1230	<b>Power Systems Electromagnetic Transients Simulation: Power quality with renewable energy and electric vehicle integration, 2nd Edition</b>	Neville R. Watson	25
PBPO0790	<b>Vehicle-to-Grid: Linking electric vehicles to the smart grid</b>	Junwei Lu & Jahangir Hossain	34
PBPO1120	<b>Wireless Power Transfer: Theory, technology, and applications</b>	Naoki Shinohara	27



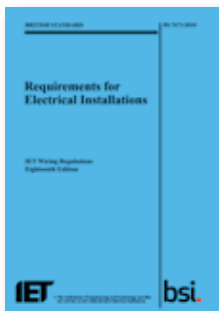
See the **IET Journals 2018** catalogue for our range of journals in the field of transportation.

BS 7671 (the IET Wiring Regulations) sets the standards for electrical installation in the UK and many other countries. The IET co-publishes BS 7671 with the British Standards Institution (BSI) and is the authority on electrical installation.

2018 sees the publication of the 18th Edition IET Wiring Regulations (BS 7671:2018). This is expected to come into effect on 1st January 2019, although industry needs to start preparing for this from its point of publication (expected July 2018).

Vast changes are anticipated to BS 7671 and all guidance publications will be updated in line with the new edition. The IET publishes the only guidance to be peer-reviewed and approved by industry.

NEW



## Requirements for Electrical Installations: IET Wiring Regulations

18th Edition  
BS 7671:2018

- the 18th edition is a major update to this title, with changes expected to include an entirely new section, Part 8, Energy Efficiency
- vital for all involved in the electrical industry, including designers, installers, and those involved in testing and inspection of electrical installations



Due Summer 2018  
Paperback | c.648pp  
978-1-78561-170-4  
PWR1800B | £95 • \$120



NEW



## On-Site Guide to BS 7671:2018

- an essential guide to BS 7671
- incorporates the extensive changes in BS 7671:2018, making this a vital guide for keeping up to date
- enables the competent electrician to deal with installations (up to 100 A, 3-phase) providing essential information in a convenient, easy-to-use format



Due Summer 2018  
Paperback | c.224pp  
978-1-78561-442-2  
PWG0180B | £30 • \$38



NEW



## Guidance Note 1: Selection & Erection

8th Edition

- a fundamental guide for specifiers, installers and those inspecting and testing installations
- contains clear guidance on how to apply the relevant sections of BS 7671
- fully up-to-date with the changes in BS 7671:2018



Due Summer 2018  
Paperback | c.244pp  
978-1-78561-445-3  
PWG1180B | £38 • \$48



NEW



## Guidance Note 2: Isolation & Switching

8th Edition

- provides clear guidance on what can be a confusing aspect of BS 7671
- ideal for those working in specification, testing and inspection and for consulting engineers, as well as electrical installers
- fully updated to BS 7671:2018



Due Summer 2018  
Paperback | c.96pp  
978-1-78561-449-1  
PWG2180B | £32 • \$40



NEW



### Guidance Note 3: Inspection & Testing

8th Edition

- a fundamental guidance book for all those involved with the testing and inspection of electrical installations
- also contains essential guidance for those studying for inspection and testing qualifications
- fully updated to BS 7671:2018



**Due Summer 2018**  
Paperback | c.156pp  
978-1-78561-452-1  
PWG3180B | £35 • \$44



NEW



### Guidance Note 4: Protection Against Fire

8th Edition

- a vital guide to an important safety aspect of working with electricity
- aimed at everyone involved with fire safety in electrical installations, including consulting engineers, electrical installers, inspectors and technicians
- fully updated to BS 7671:2018



**Due Autumn 2018**  
Paperback | c.120pp  
978-1-78561-455-2  
PWG4180B | £32 • \$40



NEW



### Guidance Note 5: Protection Against Electric Shock

8th Edition

- a core element of safety for specifiers, designers, contractors and inspectors
- provides clear guidance on how to apply the safety requirements of BS 7671 concerning electric shock
- fully updated to BS 7671:2018



**Due Autumn 2018**  
Paperback | c.152pp  
978-1-78561-458-3  
PWG5180B | £32 • \$40



NEW



### Guidance Note 6: Protection Against Overcurrent

8th Edition

- a key guide to this important area of BS 7671
- for all involved with specifying, designing, installing or verifying electrical installations
- fully updated to BS 7671:2018



**Due Autumn 2018**  
Paperback | c.124pp  
978-1-78561-461-3  
PWG6180B | £32 • \$40



NEW



### Guidance Note 7: Special Locations

6th Edition

- provides a comprehensive guide to the various special locations and installations for which additional measures are required to comply with BS 7671
- designed for anyone working in special locations where guidance may vary, including consulting engineers, electricians, electrical installers, inspectors and technicians
- fully updated to BS 7671:2018



**Due Summer 2018**  
Paperback | c.208pp  
978-1-78561-464-4  
PWG7180B | £32 • \$40



NEW



### Guidance Note 8: Earthing and Bonding

4th Edition

- includes information from BS 7430 Code of Practice for Earthing
- key guidance for all involved with specifying, designing, installing or verifying electrical installations
- fully updated to BS 7671:2018




**Due Summer 2018**  
Paperback | c.208pp  
978-1-78561-413-2  
PWG8180B | £32 • \$40



NEW



 Due Summer 2018  
Paperback | c.108pp  
978-1-78561-485-9  
PWG9180B | £32 • \$40

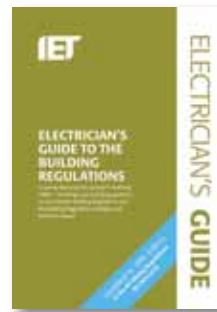



### Guidance Note 9: Energy Efficiency

1st Edition

- The publication of this title is dependent on the proposed new Part 8 being added to BS 7671:2018. If Part 8 is not included, this book will not be published
- key guidance for those planning energy efficient electrical installations

NEW



 Due Summer 2018  
Paperback | c.284pp  
978-1-78561-468-2  
PWGP180B | £27 • \$34




### Electrician's Guide to the Building Regulations

5th Edition

- includes the latest guidance on third-party certification schemes
- covers relevant parts of the Building Regulations, including Fire Safety, Ventilation and Conservation of Energy
- fully updated to BS 7671:2018

NEW



 Due Autumn 2018  
Paperback | c.224pp  
978-1-78561-471-2  
PWGC180B | £40 • \$50

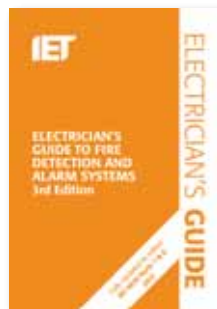



### Electrical Installation Design Guide

4th Edition

- provides step-by-step guidance on the design of electrical installations
- useful for apprentices and trainees carrying out the calculations necessary for a basic installation
- fully updated to BS 7671:2018

NEW



 Due Autumn 2018  
Paperback | c.160pp  
978-1-78561-674-7  
PWR25130 | £27 • \$34

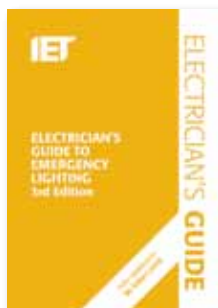



### Electrician's Guide to Fire Detection and Alarm Systems

3rd Edition

- advice on managing the requirements of both BS 7671 and BS 5839 for electrical installations
- ideal guide for those involved in the design and installation of fire detection systems as part of an electrical installation
- fully updated to the latest versions of BS 5839-1 and BS 5839-6

NEW



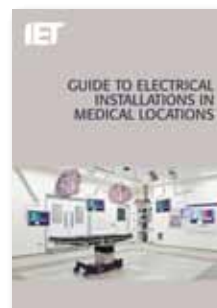
 2017  
Paperback | c.110pp  
978-1-78561-613-6  
PWR25020 | £27 • \$34




### Electrician's Guide to Emergency Lighting

3rd Edition

- provides guidance on how to manage the requirements of both BS 7671 and BS 5266
- for designers and installers working on electrical installations involving emergency lighting
- fully updated to BS 5266-1:2016



 2017  
Paperback | c.180pp  
978-1-84919-767-0  
PWR11711 | £45 • \$72




### Guide to Electrical Installations in Medical Locations

- for designers, installers and maintainers of electrical installations in medical locations
- definitive guidance on earthing and bonding arrangements in medical locations



## Guide to Consumer Units

- clarifies requirements for Regulation 421.1.201
- includes case studies showing how aspects of an installation can be approached and dealt with
- provides guidance to electricians, installers, specifiers, duty holders, housing associations, LABC and landlords

 2017  
 Paperback | c.50pp  
 978-1-78561-180-3  
 PWGF173B | £15 • \$22.67



Amendment 3 to BS 7671:2008 is expected to remain in effect until January 2019.  
 These titles are still available and will remain so until that time.


Title	Format	Price £	Price \$	Pub date	ISBN	Product Code
<b>BS 7671:2008 Requirements for Electrical Installations, IET Wiring Regulations 17th Edition inc. Amendment 3</b>	Paperback	£85	\$136	2015	978-1-84919-769-4	PWR1703B
<b>On-Site Guide (BS 7671:2008+A3:2015)</b>	Wiro-bound	£27	\$43	2015	978-1-84919-887-5	PWGO173B
<b>Guidance Note 1: Selection &amp; Erection, 7th Edition</b>	Paperback	£34	\$54	2015	978-1-84919-869-1	PWG1173B
<b>Guidance Note 2: Isolation &amp; Switching, 7th Edition</b>	Paperback	£29	\$46	2015	978-1-84919-871-4	PWG2173B
<b>Guidance Note 3: Inspection &amp; Testing, 7th Edition</b>	Paperback	£30	\$48	2015	978-1-84919-873-8	PWG3173B
<b>Guidance Note 4: Protection Against Fire, 7th Edition</b>	Paperback	£29	\$46	2015	978-1-84919-875-2	PWG4173B
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<b>Electrician's Guide to the Building Regulations, 4th Edition</b>	Wiro-bound	£25	\$40	2015	978-1-84919-889-9	PWGP173B
<b>Electrical Installation Design Guide: Calculations for Electricians and Designers, 3rd Edition</b>	Paperback	£36	\$58	2016	978-1-84919-885-1	PWGC173B
<b>Commentary on IET Wiring Regulations 17th Edition (BS 7671:2008+A3:2015)</b>	Hardback	£90	\$144	2017	978-1-84919-765-6	PWCM173B



## STUDENT GUIDES

NEW




 Due Autumn 2018  
Wiro-bound | c.280pp  
978-1-78561-474-3  
PWGS180B | £20 • \$25



### Student's Guide to the IET Wiring Regulations

- integrates with current qualifications being delivered
- using diagrams and examples, provides students with guidance to navigate their way through the information available in BS 7671 while studying electrical courses
- provides the information that students will need throughout their studies and into their careers, including information about the various Acts and Regulations that may have implications on electrical installations



 2017  
Paperback | c.200pp  
978-1-78561-244-2  
PWSC173B | £15 • \$22.67



### Student's Guide to Calculations

- provides fundamental guidance on the importance of carrying out accurate electrical calculations when designing and testing electrical installations
- easy to understand step-by-step diagrams and instructions to improve knowledge and understanding of calculations that form an integral part of level 2 and 3 electrical qualifications
- provides essential information for anyone working in the electrical industry, from apprentice to designer



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NEW

### Exam Preparation

#### Certificate in Electrical Installations (8202) – Level 2

- the 8202 L2 qualification is for learners looking to start their electrotechnical career
- helps students prepare for examinations
- includes practice examinations with fully worked and 'model' answers



2018  
Paperback | c.130pp  
978-1-78561-571-9  
PWR5120B | £20 • \$28



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### Exam Preparation

#### Advanced Technical Diploma in Electrical Installations (8202) – Level 3

- the 8202 L3 course is for those looking to progress to further qualifications in the electrotechnical industry
- helps students prepare for examinations
- includes practice examinations with fully worked and 'model' answers



2018  
Paperback | c.130pp  
978-1-78561-573-3  
PWR5130B | £20 • \$28



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### Exam Preparation

#### Requirements for Electrical Installations (2382)

- the 2381 qualification ensures learners are up to date with the latest BS 7671 requirements
- this course is updated to BS 7671:2018
- includes practice examinations with fully worked and 'model' answers



2018  
Paperback | c.130pp  
978-1-78561-575-7  
PWR5140B | £20 • \$28



### Exam Preparation

#### Electrical Installations (2391)

- the 2391 qualification is for the inspection and testing of electrical installations
- helps students prepare for examinations
- includes practice examinations with fully worked and 'model' answers



2017  
Paperback | c.130pp  
978-1-78561-569-6  
PWR5110B | £20 • \$28



### Exam Preparation

#### Electrotechnical Apprenticeship Qualification (5357)

- the 5357 qualification is for apprentices wishing to commence a career in the electrotechnical industry
- this book helps students prepare for examinations
- includes practice examinations with fully worked and 'model' answers



2017  
Paperback | c.198pp  
978-1-78561-567-2  
PWR5100B | £20 • \$28



# Model Form of Contract

for the design, supply and installation of electrical, electronic and mechanical plant

The IET's model form of contract (more commonly known as MF/1) is a key industry template for the supply and installation of electrical, electronic, or mechanical plant.

Used by the engineering community for over 100 years, this highly regarded and well-developed form can be customised for a specific purpose and has been adapted to be applicable internationally.

This standard form of contract is recommended for use by contracts officers in private and public sector organisations, mechanical and electrical engineers, facilities managers, lawyers and in-house legal representatives.

## Model Form of Contract

For the design, supply and installation of electrical, electronic and mechanical plant MF/1 (Revision 6)

- accommodates the views of purchasers, engineers and the manufacturing industry, resulting in a fair balance between Contractor and Purchaser
- provides flexibility for the parties by providing 'Special Conditions' for particular requirements
- reflects accepted best practice and standards such as ICC terms



2014 | Paperback | 96pp | 978-1-84919-804-2  
PMPA1080 | £70 • \$116

## Commentary to MF/1 Revision 6

- this newly updated commentary helps users work with this 100-page model form of contract in practical situations
- helps to interpret the clauses and the various schedules, explaining why they form part of the contract and indicating where they may be of particular value to those relying on the contract
- contains expanded coverage on parts of the contract likely to be most controversial and most likely to be an area of dispute



2017 | Paperback | 48pp | 978-1-78561-425-5  
PMPA108C | £48 • \$ tbc

There are four primary publications within the IET/IMEchE's Model Forms of Electromechanical Contract series. Please visit [www.theiet.org/model-forms](http://www.theiet.org/model-forms) for details.

## INTERACTIVE PDF VERSION

This new, editable version of MF/1 (Revision 6) saves buying a new form for each project. The PDF allows unlimited usage and is simple to edit. You can complete the form entirely on-screen, select pre-filled options, save the document electronically and circulate it easily.

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## ADDITIONAL MODEL FORMS TITLES

Title	Price (£)	Price (\$)	ISBN	Product Code
MF/1 (Revision 6) PDF version	420	N/A	978-1-78561-022-6	PMPA108D
MF/1 (Revision 6) eBook version	70	116	978-1-84919-805-9	PMPA108E
MF/2 (Revision 1) Model Form of General Conditions of Contract	60	96	978-0-85296-858-1	PM0TR009
Commentary on MF/2 (Revision 1)	45	72	978-0-85296-758-4	PMPA1020
MF/3 (Revision 1) Model Form of General Conditions of Contract	35	56	978-0-85296-202-2	PMPA1040

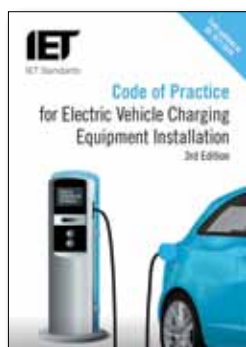
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**NEW**

## Code of Practice for Electric Vehicle Charging Equipment Installation

3rd Edition

- reviews and brings this standard in line with BS 7671:2018
- a definitive guide to safely installing electric vehicle charging equipment
- endorsed by government, contractors, automotive industry, network operators and manufacturers

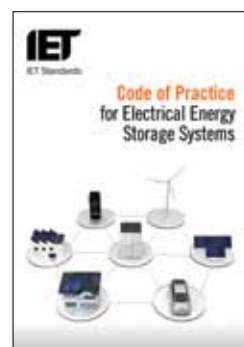



 Due Autumn 2018 | Paperback | 100pp | 978-1-78561-680-8  
PSEV003P | £65 • \$108



## Code of Practice for Electrical Energy Storage Systems

- reviews the underlying technical, operational and safety issues relating to the application of electrical energy storage systems in industrial, commercial and domestic settings
- develops broader practitioner understanding of common terms in electrical energy storage systems
- ideal guide for renewable energy developers, electrical contractors and building technicians, M&E and design consultants, and energy and facility managers

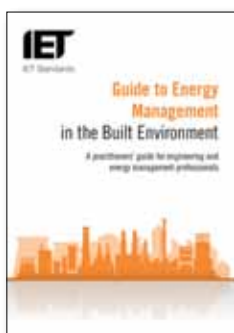



 2017 | Paperback | c.80pp | 978-1-78561-278-7  
PSEE001P | £60 • \$100



## Guide to Energy Management in the Built Environment

- provides a good-practice, structured approach to implementing energy management system activities
- covers legislation requirements, policy, understanding energy use in your operation, strategies and planning for monitoring and identifying improvements, reviewing and solutions
- relevant to energy, facilities, building and environment managers, project managers and engineers and associated building operation and support engineers and technicians

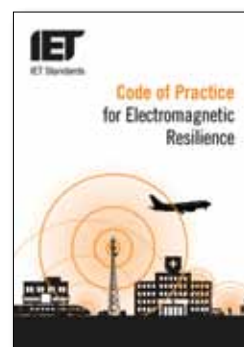


 2017 | Paperback | 152pp | 978-1-78561-112-4  
PSEM001P | £65 • \$108



## Code of Practice for Electromagnetic Resilience

- addresses the planning and risk management of EMC (electromagnetic compatibility) and describes a recommended process for EMC for functional safety
- it specifically covers the measures and techniques that can address the interfering effects of EM disturbances that a system could experience over its lifecycle
- useful for functional safety engineering project managers, practitioners and assessors of functional safety design engineering

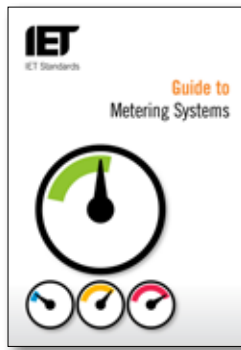


 2017 | Paperback | c.120pp | 978-1-78516-324-1  
PSER001P | £60 • \$99



## Guide to Metering Systems: Getting the most from your secondary gas, heat, electricity and water metering systems

- best-practice approach to applying sub-metering and using metering information
- covers electricity, gas, heat and water metering applications along with smart systems and communications
- relevant to energy managers, facility / site managers, consultants and contractors

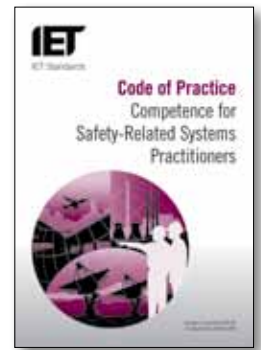


2016 | Paperback | c.80pp | 978-1-78561-059-2  
PSMS101P | £50 • \$83



## Code of Practice Competence for Safety-Related Systems Practitioners

- designed to help companies assess and maintain the competence of their engineering staff
- sets out the competencies expected and evidence required to prove competence in specific tasks and helps organisations create schemes for monitoring and measuring the competencies of employees
- for all those responsible for safety and competency in any organisation

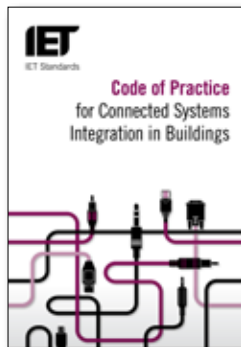


2016 | Paperback | c.120pp | 978-1-78561-111-7  
PSAC001P | £60 • \$99



## Code of Practice for Connected Systems Integration in Buildings

- provides recommendations for connected systems integration including power, connectivity and interface issues
- covers design, installation, commissioning, operation and maintenance in domestic and small-commercial buildings
- relevant to system integrators, installers and maintainers

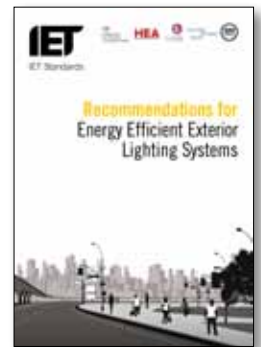


2016 | Paperback | 150pp | 978-1-84919-953-7  
PSSI001P | £60 • \$99



## Recommendations for Energy Efficient Exterior Lighting Systems

- supports customers in making informed decisions when acquiring exterior lighting systems
- expert guidance on defining, assessing and delivering high quality and compliant systems
- online Good Practice Specification Template available for free download



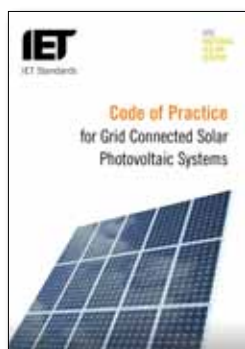
2015 | Paperback | 112pp | 978-1-84919-942-1  
PSLS101P | £75 • \$124





## Code of Practice for Grid Connected Solar Photovoltaic systems

- provides a consensus-based standard for ground- and building-mounted and building-integrated solar PV systems
- covers system performance, d.c. & a.c. electrical design and installation, grid connection, HV systems, mechanical and civil engineering, operation and maintenance
- relevant to developers, installers, maintainers and operators at all scales of solar PV systems application

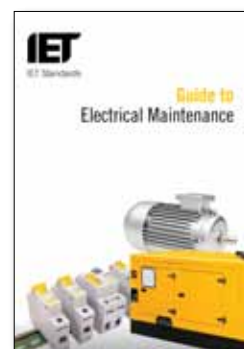


2015 | Paperback | 208pp | 978-1-84919-721-2  
PSPV001P | £69 • \$110



## Guide to Electrical Maintenance

- provides guidance on carrying out maintenance activities and using best-practice maintenance techniques
- draws together key guidance from other IET inspection, safety and maintenance titles to provide a practical overview for duty holders responsible for maintaining electrical systems
- designed for use by electrical contractors carrying out maintenance and by duty holders and building services engineers

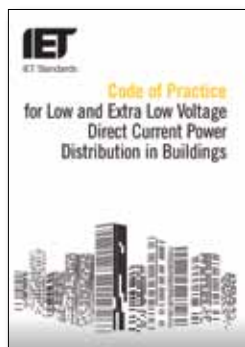


2015 | Paperback | 140pp | 978-1-84919-921-6  
PSES101P | £60 • \$99



## Code of Practice for Low and Extra Low Voltage Direct Current Power Distribution in Buildings

- sets out requirements for the growing demand for LV d.c. power systems, e.g. Power over Ethernet
- covers specification, design, selection, installation, commissioning, operation and maintenance
- solutions for telecommunications cabling, power sources and powered devices and wiring installed specifically for the purpose of d.c. power distribution

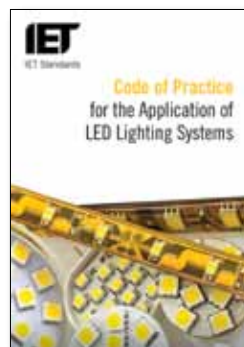


2015 | Paperback | 64pp | 978-1-84919-835-6  
PSDC001P | £65 • \$107



## Code of Practice for the Application of LED Lighting Systems

- provides users with a minimum standard for LED lighting systems installation
- topics covered include lighting design, drivers, circuits, physical considerations, commissioning, inspection and maintenance
- relevant to installers, maintainers, operators and systems managers



2014 | Paperback | 216pp | 978-1-84919-719-9  
PSLS001P | £55 • \$88



### Also available:

Title	Format	Price £	Price \$	Pub date	ISBN	Product Code
Code of Practice for Cyber Security in the Built Environment	Paperback	£80	\$132	2014	978-1-84919-891-2	PSCS001P
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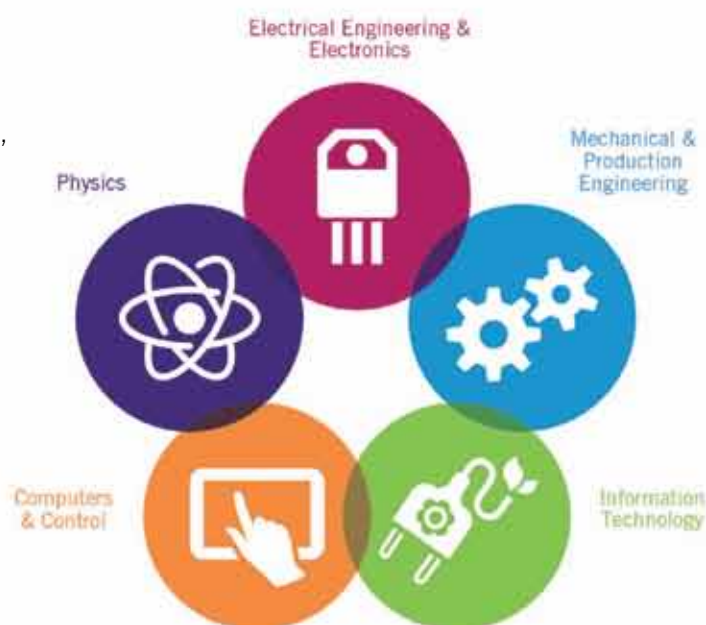


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