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And Wireless Communications By Edwin Wright

Practical Telecommunications And Wireless Communications By Edwin Wright

The book provides technical know-how not covered by most universities and colleges in a subject that is central to the roles of many electrical engineers in industry, focusing on switchgear, power cables, power factor correction, and network studies. * Learn how to install and maintain electrical power equipment in industrial settings * Select and specify the right power system at the right price * Provides the practical essentials for reliable operation of industrial

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electrical networks - covering switchgear, cabling and power correction factors

This book gives a comprehensive guide on the fundamental concepts, applications, algorithms, protocols, new trends and challenges, and research results in the area of Green Information and Communications Systems. It is an invaluable resource giving knowledge on the core and specialized issues in the field, making it highly suitable for both the new and experienced researcher in this area. Key Features: Core research topics of green information and communication systems are covered from a network design perspective, giving both theoretical and practical perspectives Provides a unified covering of otherwise disperse selected topics on green computing, information, communication and networking

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Includes a set of downloadable PowerPoint slides and glossary of terms for each chapter A 'whose-who' of international contributors Extensive bibliography for enhancing further knowledge Coverage includes: Smart grid technologies and communications Spectrum management Cognitive and autonomous radio systems Computing and communication architectures Data centres Distributed networking Cloud computing Next generation wireless communication systems 4G access networking Optical core networks Cooperation transmission Security and privacy Core research topics of green information and communication systems are covered from a network design perspective, giving both a theoretical and practical perspective A 'whose-who' of international contributors Extensive bibliography for

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enhancing further knowledge

This textbook takes a unified view of the fundamentals of wireless communication and explains cutting-edge concepts in a simple and intuitive way. An abundant supply of exercises make it ideal for graduate courses in electrical and computer engineering and it will also be of great interest to practising engineers.

Designed to increase understanding on a practical and theoretical basis, this invaluable resource provides engineers, plant operators, electricians and technicians with a thorough grounding in the principles and practicalities behind power system protection. Coverage of the fundamental knowledge needed to specify, use and maintain power protection systems is included, helping readers to increase plant

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efficiency, performance and safety. Consideration is also given to the practical techniques and engineering challenges encountered on a day-to-day basis, making this an essential resource for all.

A Comprehensive and Practical Guide

Theory and Practice

Practical Machinery Safety

Cable and Wireless Networks

Microwave and Wireless Communications Technology

Communications, Industrial Networking and TCP/IP

Even as newer cellular technologies and standards emerge, many of the fundamental principles and the components of the

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cellular network remain the same.

Presenting a simple yet comprehensive view of cellular communications technologies, Cellular Communications provides an end-to-end perspective of cellular operations, ranging from physical layer details to call set-up and from the radio network to the core network. This self-contained source for practitioners and students represents a comprehensive survey of the fundamentals of cellular communications and the landscape of commercially deployed 2G and 3G technologies and provides a

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glimpse of emerging 4G technologies. Important new insights into how various components and systems evolved. Premised on the idea that one cannot know a science without knowing its history, History of Wireless offers a lively new treatment that introduces previously unacknowledged pioneers and developments, setting a new standard for understanding the evolution of this important technology. Starting with the background—magnetism, electricity, light, and Maxwell's Electromagnetic Theory—this book offers new insights into the

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initial theory and experimental exploration of wireless. In addition to the well-known contributions of Maxwell, Hertz, and Marconi, it examines work done by Heaviside, Tesla, and passionate amateurs such as the Kentucky melon farmer Nathan Stubblefield and the unsung hero Antonio Meucci. Looking at the story from mathematical, physics, technical, and other perspectives, the clearly written text describes the development of wireless within a vivid scientific milieu. History of Wireless

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*also goes into other key areas, including:
The work of J. C. Bose and J. A. Fleming
German, Japanese, and Soviet contributions
to physics and applications of
electromagnetic oscillations and waves
Wireless telegraphic and telephonic
development and attempts to achieve
transatlantic wireless communications
Wireless telegraphy in South Africa in the
early twentieth century Antenna development
in Japan: past and present Soviet quasi-
optics at near-mm and sub-mm wavelengths
The evolution of electromagnetic*

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waveguides The history of phased array antennas Augmenting the typical, Marconi-centered approach, History of Wireless fills in the conventionally accepted story with attention to more specific, less-known discoveries and individuals, and challenges traditional assumptions about the origins and growth of wireless. This allows for a more comprehensive understanding of how various components and systems evolved. Written in a clear tone with a broad scientific audience in mind, this exciting and thorough treatment is sure to become a

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classic in the field.

This comprehensive book gives you a hands-on understanding of the techniques and architectures being used to provide voice and data services over wireless networks. It serves as a unified "how it works" guide to wireless Internet telecommunications, systematically addressing each of the technological components and how they fit together. You get a clear picture of protocols like RTP for multimedia transport and SIP for session control signaling, and see what's

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being done to tackle tough challenges in QoS control, mobility management, and security in the wireless environment. The book discusses at length the cutting-edge IP Multimedia Sub-System (IMS) of UMTS to illustrate how each of these crucial components can be successfully implemented in a real-world wireless IP system. This book will allow you to gain practical skills and know-how in grounding, bonding, lightning & surge protection. Few topics generate as much controversy and argument as that of grounding and the associated

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*topics of surge protection, shielding and lightning protection of electrical and electronic systems. Poor grounding practice can be the cause of continual and intermittent difficult-to-diagnose problems in a facility. This book looks at these issues from a fresh yet practical perspective and enables you to reduce expensive downtime on your plant and equipment to a minimum by correct application of these principles. Learning outcomes: * Apply the various methods of grounding electrical systems * Detail the*

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*applicable national Standards * Describe the purposes of grounding and bonding * List the types of systems that cannot be grounded * Describe what systems can be operated ungrounded * Correctly shield sensitive communications cables from noise and interference * Apply practical knowledge of surge and transient protection * Troubleshoot and fix grounding and surge problems * Design, install and test an effective grounding system for electronic equipment * Understand lightning and how to minimize*

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*its impact on your facility * Protect sensitive equipment from lightning . An engineer's guide to earthing, shielding, lightning and surge protection designed to deliver reliable equipment and communications systems that comply with international and national codes .*

Discover how to reduce plant downtime and intermittent faults by implementing best-practice grounding/earthing techniques .

Learn the principles of cable shielding in communication networks

Fixed Broadband Wireless Communications:

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*Principles And Practical Applications
From RF Subsystems to 4G Enabling
Technologies*

*Millimetre Wave Antennas for Gigabit
Wireless Communications*

*Lee's Essentials of Wireless
Communications*

A Laboratory-based Approach

*Wireless Communications: Principles And
Practice, 2/E*

*Cable and Wireless Networks: Theory and Practice
presents a comprehensive approach to networking, cable*

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and wireless communications, and networking security. It describes the most important state-of-the-art fundamentals and system details in the field, as well as many key aspects concerning the development and understanding of current and emergent services. In this book, the author gathers in a single volume current and emergent cable and wireless network services and technologies. Unlike other books, which cover each one of these topics independently without establishing their natural relationships, this book allows students to quickly learn and improve their mastering of the covered topics with a deeper understanding of their interconnection. It

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also collects in a single source the latest developments in the area, typically only within reach of an active researcher. Each chapter illustrates the theory of cable and wireless communications with relevant examples, hands-on exercises, and review questions suitable for readers with a BSc degree or an MSc degree in computer science or electrical engineering. This approach makes the book well suited for higher education students in courses such as networking, telecommunications, mobile communications, and network security. This is an excellent reference book for academic, institutional, and industrial professionals with technical responsibilities in

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planning, design and development of networks, telecommunications and security systems, and mobile communications, as well as for Cisco CCNA and CCNP exam preparation.

Historically batch control systems were designed individually to match a specific arrangement of plant equipment. They lacked the ability to convert to new products without having to modify the control systems, and did not lend themselves to integration with manufacturing management systems. Practical Batch Management Systems explains how to utilize the building blocks and arrange the structures of modern batch

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management systems to produce flexible schemes suitable for automated batch management, with the capability to be reconfigured to use the same plant equipment in different combinations. It introduces current best practice in the automation of batch processes, including the drive for integration with MES (Manufacturing Execution System) and ERP (Enterprise Resource Planning) products from major IT vendors. References and examples are drawn from DCS / PLC batch control products currently on the market. - Implement modern batch management systems that are flexible and easily reconfigured - Integrate batch management with other

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manufacturing systems including MES and ERP - Increase productivity through industry best practice A comprehensive review to the theory, application and research of machine learning for future wireless communications In one single volume, Machine Learning for Future Wireless Communications provides a comprehensive and highly accessible treatment to the theory, applications and current research developments to the technology aspects related to machine learning for wireless communications and networks. The technology development of machine learning for wireless communications has grown explosively and is one of the

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biggest trends in related academic, research and industry communities. Deep neural networks-based machine learning technology is a promising tool to attack the big challenge in wireless communications and networks imposed by the increasing demands in terms of capacity, coverage, latency, efficiency flexibility, compatibility, quality of experience and silicon convergence. The author – a noted expert on the topic – covers a wide range of topics including system architecture and optimization, physical-layer and cross-layer processing, air interface and protocol design, beamforming and antenna configuration, network coding and slicing, cell acquisition

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and handover, scheduling and rate adaptation, radio access control, smart proactive caching and adaptive resource allocations. Uniquely organized into three categories: Spectrum Intelligence, Transmission Intelligence and Network Intelligence, this important resource: Offers a comprehensive review of the theory, applications and current developments of machine learning for wireless communications and networks Covers a range of topics from architecture and optimization to adaptive resource allocations Reviews state-of-the-art machine learning based solutions for network coverage Includes an overview of the applications of machine learning

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algorithms in future wireless networks Explores flexible backhaul and front-haul, cross-layer optimization and coding, full-duplex radio, digital front-end (DFE) and radio-frequency (RF) processing Written for professional engineers, researchers, scientists, manufacturers, network operators, software developers and graduate students, Machine Learning for Future Wireless Communications presents in 21 chapters a comprehensive review of the topic authored by an expert in the field.

New technologies are revolutionising the way manufacturing and supply chain management are implemented. These changes are delivering

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manufacturing firms the competitive advantage of a highly flexible and responsive supply chain and manufacturing system to ensure that they meet the high expectations of their customers, who, in today's economy, demand absolutely the best service, price, delivery time and product quality. To make e-manufacturing and supply chain technologies effective, integration is needed between various, often disparate systems. To understand why this is such an issue, one needs to understand what the different systems or system components do, their objectives, their specific focus areas and how they interact with other systems. It is also required to understand how

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these systems evolved to their current state, as the concepts used during the early development of systems and technology tend to remain in place throughout the life-cycle of the systems/technology. This book explores various standards, concepts and techniques used over the years to model systems and hierarchies in order to understand where they fit into the organization and supply chain. It looks at the specific system components and the ways in which they can be designed and graphically depicted for easy understanding by both information technology (IT) and non-IT personnel. Without a good implementation philosophy, very few systems add any real

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benefit to an organization, and for this reason the ways in which systems are implemented and installation projects managed are also explored and recommendations are made as to possible methods that have proven successful in the past. The human factor and how that impacts on system success are also addressed, as is the motivation for system investment and subsequent benefit measurement processes. Finally, the vendor/user supply/demand within the e-manufacturing domain is explored and a method is put forward that enables the reduction of vendor bias during the vendor selection process. The objective of this book is to provide the reader with a good understanding

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regarding the four critical factors (business/physical processes, systems supporting the processes, company personnel and company/personal performance measures) that influence the success of any e-manufacturing implementation, and the synchronization required between these factors. · Discover how to implement the flexible and responsive supply chain and manufacturing execution systems required for competitive and customer-focused manufacturing · Build a working knowledge of the latest plant automation, manufacturing execution systems (MES) and supply chain management (SCM) design techniques · Gain a fuller understanding of the four

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critical factors (business and physical processes, systems supporting the processes, company personnel, performance measurement) that influence the success of any e-manufacturing implementation, and how to evaluate and optimize all four factors

An Introduction to the Costs and Benefits of New Technologies

Advanced Optical and Wireless Communications Systems

Practical Telecommunications and Wireless

Communications for Business and Industry

Practical Machinery Vibration Analysis and Predictive Maintenance

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Practical Electrical Equipment and Installations in Hazardous Areas

Applications, Networks, Platforms, Architectures, and Security

WIRELESS COMMUNICATION SIGNALS A practical guide to wireless communication systems and concepts
Wireless technologies and services have evolved significantly over the last couple of decades, and *Wireless Communication Signals* offers an important guide to the most recent advances in wireless communication systems and concepts grounded in a practical and laboratory perspective. Written by a noted expert on the topic, the book provides the information needed to

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model, simulate, test, and analyze wireless system and wireless circuits using modern instrumentation and computer aided design software. Designed as a practical resource, the book provides a clear understanding of the basic theory, software simulation, hardware test, and modeling, system component testing, software and hardware interactions and co-simulations. This important book: Provides organic and harmonized coverage of wireless communication systems Covers a range of systems from radio hardware to digital baseband signal processing Presents information on testing and measurement of wireless communication systems and subsystems Includes MATLAB file codes Written for professionals in the communications industry, technical managers, and researchers

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in both academia and industry. Wireless Communication Signals introduces wireless communication systems and concepts from both a practical and laboratory perspective. This book will provide a comprehensive technical guide covering fundamentals, recent advances and open issues in wireless communications and networks to the readers. The objective of the book is to serve as a valuable reference for students, educators, scientists, faculty members, researchers, engineers and research strategists in these rapidly evolving fields and to encourage them to actively explore these broad, exciting and rapidly evolving research areas. Combining theoretical knowledge and practical applications, this advanced-level textbook covers the most important aspects

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of contemporary digital communication systems. Introduction to Digital Communication Systems focuses on the rules of functioning digital communication system blocks, starting with the performance limits set by the information theory. Drawing on information relating to turbo codes and LDPC codes, the text presents the basic methods of error correction and detection, followed by baseband transmission methods, and single- and multi-carrier digital modulations. The basic properties of several physical communication channels used in digital communication systems are explained, showing the transmission and reception methods on channels suffering from intersymbol interference. The text also describes the most recent developments in the transmission techniques specific to

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wireless communications used both in wireline and wireless systems. The case studies are a unique feature of this book, illustrating elements of the theory developed in each chapter. Introduction to Digital Communication Systems provides a concise approach to digital communications, with practical examples and problems to supplement the text. There is also a companion website featuring an instructors ' solutions manual and presentation slides to aid understanding. Offers theoretical and practical knowledge in a self-contained textbook on digital communications Explains basic rules of recent achievements in digital communication systems such as MIMO, turbo codes, LDPC codes, OFDMA, SC-FDMA Provides problems at the end of each chapter with an

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instructors ' solutions manual on the companion website
Includes case studies and representative communication
system examples such as DVB-S, GSM, UMTS, 3GPP-LTE
Machinery Vibration Analysis and Predictive Maintenance
provides a detailed examination of the detection, location and
diagnosis of faults in rotating and reciprocating machinery
using vibration analysis. The basics and underlying physics of
vibration signals are first examined. The acquisition and
processing of signals is then reviewed followed by a discussion
of machinery fault diagnosis using vibration analysis. Hereafter
the important issue of rectifying faults that have been identified
using vibration analysis is covered. The book also covers the
other techniques of predictive maintenance such as oil and

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particle analysis, ultrasound and infrared thermography. The latest approaches and equipment used together with the latest techniques in vibration analysis emerging from current research are also highlighted. Understand the basics of vibration measurement Apply vibration analysis for different machinery faults Diagnose machinery-related problems with vibration analysis techniques

Theory and Techniques

Wireless Communications and Networks

Adaptive Wireless Communications

Wireless Communication Signals

Wireless Communications Systems

Practical Industrial Data Communications

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Whatever your hydraulic applications, Practical Hydraulic Systems: Operation & Troubleshooting For Engineers & Technicians will help you to increase your knowledge of the fundamentals, improve your maintenance programs and become an excellent troubleshooter of problems in this area. Cutaways of all major components are included in the book to visually demonstrate the components' construction and operation. Developing an understanding of how it works leads to an understanding of how and why it fails. Multimedia views of the equipment are shown, to give as realistic a view of hydraulic systems as possible. The book is highly practical, comprehensive and interactive. It discusses Hydraulic Systems construction, design applications, operations, maintenance, and management issues and provides you with

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the most up-to-date information and Best Practice in dealing with the subject. * A focus on maintenance and troubleshooting makes this book essential reading for practising engineers. * Written to cover the requirements of mechanical / industrial and civil engineering. * Cutaway diagrams demonstrate the construction and operation of key equipment.

"You'll find in this book : Tech savvy you need for strategic decision making, Pros and cons of cellular flavors versus other wireless technology, Tools for making wireless decisions that work today (and will still work tomorrow), Questions to ask to avoid bad choices such as the picture-phone system and SSB for cellular, Insider data on coming user demands, Tools you need to write glitch-free, foresighted

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technical specs, Survival lessons from the past's failed systems, standards, and assumptions." (source : 4ème de couverture).

This text offers a practical, device-based approach to the study of microwave and wireless communications. Student objectives, questions and problems, and end-of-chapter summaries are used to reinforce the points made

With the emergence of broadband wireless communication systems, new business opportunities have appeared for operators, content providers, and manufacturers. Broadband wireless communications technologies promise the freedom of constant access to the Internet at high speeds, without the limitation of connection cables. Broadband Wireless Communications Business provides comprehensive coverage

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of the present status and future evolution of these technologies, giving vital practical cost and benefit advice on design, construction and implementation. The author focuses on the costs associated with network design and operation, examining resources, maintenance and billing considerations in terms of Quality of Service provisioning. The future of 4G is explained, with enhancing technologies, cellular design topologies and ad-hoc technologies all covered in-depth. This book will enable the reader to make key business decisions: how to evaluate a technology, which to use, how to combine several technologies to reach a target market, how to differentiate from competitors and how to take advantage of future possible enhancements. Broadband Wireless Communications Business: Defines the unique technical

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features of the new broadband wireless communications systems and explains what these mean for operator and manufacturer businesses. Offers a complete guide to all current access technologies, associated standards, and duplex modes. Provides advice on key business cost and benefit issues. Addresses wireless technology from the point of view of numerous market sectors: public mobile systems, hot spot coverage, personal area networks, and multi-user shared usage of resources, etc. This text is essential for decision makers and industry key players responsible for the design, development, implementation and management of wireless telecommunications systems. Researchers specializing in the field of wireless technology and graduate students on telecommunications courses will also find it an

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excellent guide to the topic.

Handbook of Green Information and Communication Systems

Practical Batch Process Management

A Practical Guide to Design and Analysis in a System Context

Broadband Wireless Communications Business

History of Wireless

An Introduction

Wireless communication systems, since their inception in the form of cellular communications, have spread rapidly throughout the western world and the trend is catching on in the developing countries as well. These systems have caused revolutionary changes in the way we live. Cellular Communications have become important both as means of communication and as a new domain of commercial enterprise. Hand held telephones are now rapidly

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replacing the fixed telephone and in less than twenty years, the number of subscribers has reached nearly three quarters of a billion. In a short span of twenty years, the cellular communications progressed from the first generation to the third generation systems, which started operations in Japan on October 1, 2001. The first generation wireless technology, which was thought to be obsolete is now being used for fixed wired telephony in several countries of Asia, Africa and Latin America. As some commentator said in 1983, the cellular system is the best thing that has happened in telecommunications since the introduction of computers to the masses. This book is written to provide readers with the fundamental concepts of wireless communications. It is intended for a graduate course on wireless communications but it could be easily adopted at the senior level by skipping material involving difficult

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mathematical manipulations. The text does not go through the rigorous material on mathematical treatment of electromagnetic waves and propagation, rather it emphasizes more on the practical aspects of this.

This textbook introduces the advanced topics of: (i) wireless communications, (ii) free-space optical (FSO) communications, (iii) indoor optical wireless (IR) communications, and (iv) fiber-optics communications and presents these different types of communication systems in a unified fashion for better practical use. Fundamental concepts, such as propagation principles, modulation formats, channel coding, diversity principles, MIMO signal processing, multicarrier modulation, equalization, adaptive modulation and coding, detection principles, and software defined transmission are first described and then followed up with a detailed

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look at each particular system. The book is self-contained and structured to provide straightforward guidance to readers looking to capture fundamentals and gain theoretical and practical knowledge about wireless communications, optical communications, and fiber-optics communications, all which can be readily applied in studies, research, and practical applications. The textbook is intended for an upper undergraduate or graduate level course in optical communication. It features problems, an appendix with all background material needed, and homework.

Practical Centrifugal Pumps is a comprehensive guide to pump construction, application, operation, maintenance and management issues. Coverage includes pump classifications, types and criteria for selection, as well as practical information on the use of pumps, such as how to read pump curves and cross reference. Throughout the

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book the focus is on best practice and developing the skills and knowledge required to recognise and solve pump problems in a structured and confident manner. Case studies provide real-world scenarios covering the design, set up, troubleshooting and maintenance of pumps. · A comprehensive guide to pump construction, design, installation, operation, troubleshooting and maintenance. · Develop real-world knowhow and practical skills through seven real-world case studies · Coverage includes pump classifications, types and criteria for selection, as well as practical information on the use of pumps

The technology and structure of telecommunications networks has changed dramatically over the past few years. These developments have changed the equipment you purchase, the services you use, the providers you can choose, and the methods available for transporting

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data. Practical Telecommunications and Wireless Communications for Engineers and Technicians will be of particular benefit to those who want to take full advantage of the latest and most effective telecommunications technology and services. This book provides a grounding in the fundamentals of modern telecommunications systems in use in industrial, engineering and business settings. From networking for control systems to the use of Wireless LANs for enhanced on-site communications systems. This is a cutting-edge book on the fundamentals of telecommunications for anyone looking for a complete understanding of the essentials of the terms, jargon and technologies used. It has been designed for those who require a basic grounding in telecommunications for industrial, engineering and business applications. · Gain an understanding of the fundamentals of modern industrial, engineering and business

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telecommunications systems, from networking for industrial control to the use of Wireless LANs for enhanced on-site communications systems · Learn to take full advantage of the latest and most effective telecommunications technology and services · Provides a thorough grounding in the terms, jargon and technologies involved in data communications

MIMO Channels and Networks

Practical Hazops, Trips and Alarms

Practical Telecommunications and Wireless Communications

Practical Centrifugal Pumps

For Business and Industry

Fundamentals of Wireless Communication Engineering

Technologies

This book, suitable for IS/IT courses and self study, presents

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a comprehensive coverage of the technical as well as business/management aspects of mobile computing and wireless communications. Instead of one narrow topic, this classroom tested book covers the major building blocks (mobile applications, mobile computing platforms, wireless networks, architectures, security, and management) of mobile computing and wireless communications. Numerous real-life case studies and examples highlight the key points. The book starts with a discussion of m-business and m-government initiatives and examines mobile computing applications such as mobile messaging, m-commerce, M-CRM, M-portals, M-SCM, mobile agents, and sensor

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applications. The role of wireless Internet and Mobile IP is explained and the mobile computing platforms are analyzed with a discussion of wireless middleware, wireless gateways, mobile application servers, WAP, i-mode, J2ME, BREW, Mobile Internet Toolkit, and Mobile Web Services. The wireless networks are discussed at length with a review of wireless communication principles, wireless LANs with emphasis on 802.11 LANs, Bluetooth, wireless sensor networks, UWB (Ultra Wideband), cellular networks ranging from 1G to 5G, wireless local loops, FSO (Free Space Optics), satellites communications, and deep space networks. The book concludes with a review of the

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architectural, security, and management/support issues and their role in building, deploying and managing wireless systems in modern settings.

This practically-oriented, all-inclusive guide covers all the major enabling techniques for current and next-generation cellular communications and wireless networking systems. Technologies covered include CDMA, OFDM, UWB, turbo and LDPC coding, smart antennas, wireless ad hoc and sensor networks, MIMO, and cognitive radios, providing readers with everything they need to master wireless systems design in a single volume. Uniquely, a detailed introduction to the properties, design, and selection

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of RF subsystems and antennas is provided, giving readers a clear overview of the whole wireless system. It is also the first textbook to include a complete introduction to speech coders and video coders used in wireless systems. Richly illustrated with over 400 figures, and with a unique emphasis on practical and state-of-the-art techniques in system design, rather than on the mathematical foundations, this book is ideal for graduate students and researchers in wireless communications, as well as for wireless and telecom engineers.

Complete and comprehensive application-focused reference on millimetre wave antennas Millimetre Wave Antennas for

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Gigabit Wireless Communications covers a vast wealth of material with a strong focus on the current design and analysis principles of millimetre wave antennas for wireless devices. It provides practising engineers with the design rules and considerations required in designing antennas for the terminal. The authors include coverage of new configurations with advanced angular and frequency filtering characteristics, new design and analysis techniques, and methods for filter miniaturization. The book reviews up-to-date research results and utilizes numerous design examples to emphasize computer analysis and synthesis whilst also discussing the applications of commercially available

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software. Key Features: Advanced and up-to-date treatment of one of the fastest growing fields of wireless communications Covers topics such as Gigabit wireless communications and its required antennas, passive and active antenna design and analysis techniques, multibeam antennas and MIMO, IEEE 802.15.3c, WiMedia®, and advanced materials and technologies Offers a practical guide to integrated antennas for specific configurations requirements Addresses a number of complex, real-world problems that system and antenna engineers are going to face in millimetre-wave communications industry and provides solutions Contains detailed design examples,

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drawings and predicted performance This book is an invaluable tool for antenna professionals (engineers, designers, and developers), microwave professionals, wireless communication system professionals, and industries with microwave and millimetre wave research projects.

Advanced students and researchers working in the field of millimetre wave engineering will also find this book very useful.

Do you have trips and safety interlocks in your plant? Are they good enough or are they perhaps over-designed and much more expensive than necessary? Are you or your company aware of how Hazard Studies should define risk

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reduction requirements? Are you actually using Hazard Studies at all? The answer is the integrated approach to safety management. New international standards combined with well-proven hazard study methods can improve safety management in your company. Practical Hazops, Trips and Alarms for Engineers and Technicians describes the role of hazard studies in risk management, and then proceeds with basic training in Hazop techniques. A number of practical exercises support the reference information and allow you to test your understanding of the material in the book. This book aims to bridge the discipline gap between hazard studies and the provision of safety-related alarm and trip

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systems. It provides training in hazard and operability methods (Hazops) and in the principles of safety instrumented systems as defined by international standard IEC 61508. Design an integrated safety management system to increase efficiency and reduce costs Learn how to carry out hazard and operability studies (Hazops) and find out how to convert Hazop outputs into safety requirements specifications Implement safety instrumented systems to the new IEC standards (IEC61508)

Practical Hydraulic Systems: Operation and Troubleshooting for Engineers and Technicians
Practical Grounding, Bonding, Shielding and Surge

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Protection

Introduction to Digital Communication Systems

Fundamentals of Wireless Communication

Practical E-Manufacturing and Supply Chain Management

Practical Power Distribution for Industry

***A broad introduction to the fundamentals of
wirelesscommunication engineering technologies
Covering both theory and practical topics,
Fundamentals ofWireless Communication
Engineering Technologies offers a soundsurvey of
the major industry-relevant aspects of
wirelesscommunication engineering technologies.***

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Divided into four main sections, the book examines RF, antennas, and propagation; wireless access technologies; network and service architectures; and other topics, such as network management and security, policies and regulations, and facilities infrastructure. Helpful cross-references are placed throughout the text, offering additional information where needed. The book provides: Coverage that is closely aligned to the IEEE's Wireless Communication Engineering Technologies (WCET) certification program syllabus, reflecting the author's direct involvement in the development of the program A special emphasis on wireless cellular

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and wireless LAN systems An excellent foundation for expanding existing knowledge in the wireless field by covering industry-relevant aspects of wireless communication Information on how common theories are applied in real-world wireless systems With a holistic and well-organized overview of wireless communications, Fundamentals of Wireless Communication Engineering Technologies is an invaluable resource for anyone interested in taking the WCET exam, as well as practicing engineers, professors, and students seeking to increase their knowledge of wireless communication engineering technologies.

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The objective of this book is to outline the best practice in designing, installing, commissioning and troubleshooting industrial data communications systems. In any given plant, factory or installation there are a myriad of different industrial communications standards used and the key to successful implementation is the degree to which the entire system integrates and works together. With so many different standards on the market today, the debate is not about what is the best - be it Foundation Fieldbus, Profibus, Devicenet or Industrial Ethernet but rather about selecting the most appropriate technologies and standards for a

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given application and then ensuring that best practice is followed in designing, installing and commissioning the data communications links to ensure they run fault-free. The industrial data communications systems in your plant underpin your entire operation. It is critical that you apply best practice in designing, installing and fixing any problems that may occur. This book distills all the tips and tricks with the benefit of many years of experience and gives the best proven practices to follow. The main steps in using today's communications technologies involve selecting the correct technology and standards for your plant

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based on your requirements; doing the design of the overall system; installing the cabling and then commissioning the system. Fiber Optic cabling is generally accepted as the best approach for physical communications but there are obviously areas where you will be forced to use copper wiring and, indeed, wireless communications. This book outlines the critical rules followed in installing the data communications physical transport media and then ensuring that the installation will be trouble-free for years to come. The important point to make is that with today's wide range of protocols available, you only need to know how to select, install and maintain

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them in the most cost-effective manner for your plant or factory - knowledge of the minute details of the protocols is not necessary. An engineer's guide to communications systems using fiber optic cabling, copper cabling and wireless technology Covers: selection of technology and standards - system design - installation of equipment and cabling - commissioning and maintenance Crammed with practical techniques and know how - written by engineers for engineers Wireless telecommunication systems generate a huge amount of interest. In the last two decades, these systems have experienced at least three major

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technological leaps, and it has become impossible to imagine how society was organized without them. In this book, we propose a macroscopic approach on wireless systems, and aim at answering key questions about power, data rates, multiple access, cellular engineering and access networks architectures. We present a series of solved problems, whose objective is to establish the main elements of a global link budget in several radiocommunications systems. Contents 1. Radio Propagation. 2. F/TDMA and GSM. 3. CDMA and UMTS. 4. OFDM and LTE. 5. MIMO and Beamforming. 6. UWB. 7. Synchronization. 8. Digital

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Communications Fundamentals. 9. Erlang B Tables.

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Conservatoire National des Arts et Métiers (CNAM). Emmanuelle Vivier received her engineering degree from Institut Supérieur d'Electronique de Paris (ISEP) and her PhD in radiocommunications from Conservatoire National des Arts et Métiers (CNAM). She is an associate professor at ISEP, where she is responsible of networks and telecommunications teaching majors.

Practical Machinery Safety aims to provide you with the knowledge to tackle machinery safety control problems at a practical level whilst achieving compliance with national and international standards. The book highlights the major

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international standards that are used to support compliance with EU regulations and uses these standards as a basis for the design procedures. It looks at the risk assessment processes used to identify hazards and to quantify the risks inherent in a machine. It introduces the concepts of safety categories as defined by standard EN954-1 (Safety of Machinery) and illustrates the principles of failsafe design, fault tolerance and self-testing. It also provides an introduction to machinery protection devices such as guards, enclosures with interlocks and guard-monitoring relays, locking systems, safety mats, photo-electric and electro-sensitive

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principles and the application of light curtains, a study of Safety Control System techniques, and introduces the principles of safety-certified PLCs. Plan and implement safety systems that deliver a safe working environment and compliance with national and international standards Apply simple risk assessments and hazard design methods to your own projects Identify hazards that occur with machinery and know how to deal with them

Cellular Communications

***Practical Fundamentals of Telecommunications and
Wireless Communications***

Best Practice Techniques

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Recent Advances

Wireless Communications

Machine Learning for Future Wireless Communications

A comprehensive introduction to the fundamentals of design and applications of wireless communications. *Wireless Communications Systems* starts by explaining the fundamentals needed to understand, design, and deploy wireless communications systems. The author, a noted expert on the topic, explores the basic concepts of signals, modulation, antennas, and propagation

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with a MATLAB emphasis. The book emphasizes practical applications and concepts needed by wireless engineers. The author introduces applications of wireless communications and includes information on satellite communications, radio frequency identification, and offers an overview with practical insights into the topic of multiple input multiple output (MIMO). The book also explains the security and health effects of wireless systems concerns on users and designers. Designed as a practical resource, the text contains a range of examples and pictures that illustrate many

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different aspects of wireless technology. The book relies on MATLAB for most of the computations and graphics. This important text: Reviews the basic information needed to understand and design wireless communications systems Covers topics such as MIMO systems, adaptive antennas, direction finding, wireless security, internet of things (IoT), radio frequency identification (RFID), and software defined radio (SDR) Provides examples with a MATLAB emphasis to aid comprehension Includes an online solutions manual and video lectures on selected topics

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Written for students of engineering and physics and practicing engineers and scientists, *Wireless Communications Systems* covers the fundamentals of wireless engineering in a clear and concise manner and contains many illustrative examples. A comprehensive and self-contained exploration of cutting-edge applications in adaptive wireless communications, perfect for self-study. This book provides the reader with an understanding of the hazards involved in using electrical equipment in Potentially Explosive Atmospheres. It is based on the newly adopted

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international IEC79 Series of Standards that are now harmonizing and replacing older national Standards. Explosion-proof installations can be expensive to design, install and operate. The strategies and techniques described in this book can significantly reduce costs whilst maintaining plant safety. The book explains the associated terminology and its correct use - from Area Classification through to the selection of explosion-protected electrical apparatus, describing how protection is achieved and maintained in line with these international requirements. The IEC standards

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require that engineering staff and their management are trained effectively and safely in Hazardous Areas, and this book is designed to help fulfill that need. A basic understanding of instrumentation and electrical theory would be of benefit to the reader, but no previous knowledge of hazardous area installation is required. * An engineer's guide to the hazards and best practice for using electrical equipment in Potentially Explosive Atmospheres. * Fully in line with the newly adopted international standards, the IEC79 series. * Clear explanations of terminology and

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background information make this the most
accessible book on this subject.

Wireless Internet Telecommunications

Wireless Communication Systems

Practical Power System Protection

Mobile Computing and Wireless Communications

Wireless Telecommunication Systems