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Light emitting diodes (LEDs) are already used in traffic signals, signage lighting, and automotive applications. However, its ultimate goal is to replace traditional illumination through LED lamps since LED lighting significantly reduces energy consumption and cuts down on carbon-dioxide emission. Despite dramatic advances in LED technologies (e.g., growth, doping and processing technologies), however, there remain critical issues for further improvements yet to be achieved for the realization of solid-state lighting. This book aims to provide the readers with some contemporary LED issues, which have not been comprehensively discussed in the published books and, on which the performance of LEDs is seriously dependent. For example, most importantly, there must be a breakthrough in the growth of high-quality nitride semiconductor epitaxial layers with a low density of dislocations, in particular, in the growth of Al-rich and In-rich GaN-based semiconductors. The materials quality is directly dependent on the substrates used, such as sapphire, Si, etc. In addition, efficiency droop, growth on different orientations and polarization are also

important. Chip processing and packaging technologies are key issues. This book presents a comprehensive review of contemporary LED issues. Given the interest and importance of future research in nitride semiconducting materials and solid state lighting applications, the contents are very timely. The book is composed of chapters written by leading researchers in III-nitride semiconducting materials and device technology. This book will be of interest to scientists and engineers working on LEDs for lighting applications. Postgraduate researchers working on LEDs will also benefit from the issues this book provides.

No further information has been provided for this title.

This book provides a chronological literature review of optical wireless communication, followed by a detailed blueprint of a visible light communication (VLC) setup with the key characteristics of LEDs and photodetectors. Next, the optical channel impulse response and its description for different possible topologies is presented together with a description of the optical and electrical setup for both optical transmitters (oTx) and optical receivers (oRx). Different single carrier and multi-carrier modulations particularly applied in visible light communication setups are also presented. Both the optical and electrical modules of oTx and oRx are simulated and then prototyped and tested as embedded devices in an underground positioning and monitoring system for a

continuous real time identification of the personnel on the main underground galleries where the illumination network is already installed. Presents a comprehensive look at visible light communication technology, both in description and application; Shows where and how VLC has been launched on the market as an alternative or partner technology to the existing wireless communication technologies based on radio frequency; Includes special focus on underground positioning and monitoring with embedded VLC.

The focus of this book is broadband telecommunications: both fixed (DSL, fiber) and wireless (1G-4G). It uniquely covers the broadband telecom field from technological, business and policy angles. The reader learns about the necessary technologies to a certain depth in order to be able to evaluate and analyse competing technologies. The student can then apply the results of the technology analysis to business (revenues and costs, market size, etc) to evaluate how successful a technology may be in the market place. Technology and business analyses lead to policy analysis and how government deal with rolling out of broadband networks; content (such as text, audio and video) delivered over them. Furthermore, how government may ensure a competitive and fair environment is maintained for service provision. The book is unique in its approach as it prepares the student to evaluate products from three different

viewpoints of technology-business and policy. The book provides a unified vision for broadband communications, offering the required background as well a description of existing broadband systems, finishing with a business scenario. The book breaks new ground by discussing telecommunication technologies in a business and policy context.

This volume constitutes the refereed proceedings of the 3rd International Conference on Advanced Communication and Networking, ACN 2011, held in Brno, Czech Republik, in June 2011. The 57 revised full papers presented in this volume were carefully reviewed and selected from numerous submissions. The papers focus on the various aspects of progress in Advanced Communication and Networking with computational sciences, mathematics and information technology and address all current issues of communication basic and infrastructure, networks basic and management, multimedia application, image, video, signal and information processing.

Gain a detailed understanding of the protocols, network architectures and techniques being considered for 5G wireless networks with this authoritative guide to the state of the art. • Get up to speed with key topics such as cloud radio access networks, mobile edge computing, full duplexing, massive MIMO, mmWave, NOMA, Internet of things, M2M communications, D2D

communications, mobile data offloading, interference mitigation techniques, radio resource management, visible light communications, and smart data pricing. • Learn from leading researchers in academia and industry about the most recent theoretical developments in the field. • Discover how each potential technology can increase the capacity, spectral efficiency, and energy efficiency of wireless systems. Providing the most comprehensive overview of 5G technologies to date, this is an essential reference for researchers, practicing engineers and graduate students working in wireless communications and networking.

Presenting a collection of high-quality research papers on image processing and communications, this book not only discusses emerging applications of the currently available solutions, but also outlines potential future techniques and research directions in these areas. Gathering the proceedings of the 10th International Conference on Image Processing and Communications (IP&C 2018), held in Bydgoszcz, Poland in November 2018, it is divided into two parts. Part I focuses on image processing, offering a comprehensive survey of available methods and discussing current trends in computer vision. In turn, Part II presents novel results on networks, communications and a diverse range of applications, including cybersecurity and cloud computing. This is the book, in which the subject matter is dealt from elementary to the advance level in a unique manner. Three outstanding features can be claimed for the book viz.

(i) style; the student, while going through the pages would feel as if he is attending a class room. (ii) language: that an average student can follow and (iii) approach: it takes the student from "known to unknown" and "simple to complex." The book is reader friendly, thought provoking and stimulating. It helps in clearing cobwebs of the mind. The style is lucid and un-adulterated. Unnecessary mathematics has been avoided. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

The first book devoted entirely to B2B social marketing B2B markets are fundamentally different from consumer markets. Decisions are made on value, not impulse. Buying cycles are complex, often with many stakeholders involved. Relationships and support are critical. Bet-the-business decisions demand discipline, knowledge, and lots of information. This hands-on guide covers topics unique to this segment, including cost justification, prospecting and lead generation, matching tools to the sales funnel, building, B2B search engine optimization, social media monitoring, social media policy development, long-term client relationships, gaining stakeholder support, building a more transparent organization, and what's coming next. Features plentiful examples, case studies, and best practices Focuses on the channels that are most effective for B2B marketers Builds on the authors' more than 30 years of combined experience in the new media/social media space, as well as two previous successful books Leverage the vast business-to-business potential of Facebook, LinkedIn, Twitter, and many other

social media platforms today with Social Marketing to the Business Customer!

Nitride Semiconductor Light-Emitting Diodes (LEDs): Materials, Technologies, and Applications, Second Edition reviews the fabrication, performance and applications of the technology, encompassing the state-of-the-art material and device development, along with considerations regarding nitride-based LED design. This updated edition is based on the latest research and advances, including two new chapters on LEDs for large displays and laser lighting. Chapters cover molecular beam epitaxy (MBE) growth of nitride semiconductors, modern metalorganic chemical vapor deposition (MOCVD) techniques, the growth of nitride-based materials, and gallium nitride (GaN)-on-sapphire and GaN-on-silicon technologies for LEDs. Nanostructured, non-polar and semi-polar nitride-based LEDs, as well as phosphor-coated nitride LEDs, are also discussed. The book also addresses the performance of nitride LEDs, including photonic crystal LEDs, surface plasmon enhanced LEDs, color tuneable LEDs, and LEDs based on quantum wells and quantum dots. Further chapters discuss the development of LED encapsulation technology and fundamental efficiency droop issues in gallium indium nitride (GaInN) LEDs. It is a technical resource for academics, physicists, materials scientists, electrical engineers, and those working in the lighting, consumer electronics, automotive, aviation, and communications sectors. Features new chapters on laser lighting, addressing the latest advances on this topic Reviews fabrication, performance, and applications of this technology that encompass the state-

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of-the-art material and device development Covers the performance of nitride LEDs, including photonic crystal LEDs, surface plasmon enhanced LEDs, color tuneable LEDs, and LEDs based on quantum wells and quantum dots Highlights applications of nitride LEDs, including liquid crystal display (LCD) backlighting, infra-red emitters, and automotive lighting Provides a comprehensive discussion of gallium nitride on both silicon and sapphire substrates

Readers learn about the most popular wireless data communications technologies in use today as **GUIDE TO WIRELESS COMMUNICATIONS, 4Ed** examines Bluetooth, ZigBee, Wi-Fi, cellular and satellite communications while providing a broad industry perspective. Readers develop a solid base of knowledge in Wireless Personal Area Networks (WPANs), Wireless Local Area Networks (WLANs), Wireless Metropolitan Area Networks (WMANs), and Wireless Wide Area Networks (WWANs) to better understand the most popular wireless communications available today. This book's comprehensive approach to wireless communication technology provides the solid background readers need to prepare for a future career in today's information and communications technology field. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

What are the do's and don'ts of being a good assistant lighting designer? What are focus tapes, and how do I use them? What is the best method for creating a magic sheet? What should be found in every assistant's kit? How do I make that first

important leap into this professional career? Answer these questions and many more with *The Assistant Lighting Designer's Toolkit*. This definitive guide unlocks the insider-secrets used to succeed as a professional assistant lighting designer (ALD) – whether choosing assisting as a career or while transitioning to another. This book outlines, step-by-step, the challenges the ALD faces during every phase of production. Never before has a resource existed that views the design process through the eyes of the assistant. Intermingled among the nuts and bolts of the paperwork and essential procedures, top industry professionals reveal tips for personal survival in this challenging career – both domestically and abroad as well as in other careers in lighting. Within these pages are the industry secrets rarely taught in school! The author's website can be found at <http://www.aldtoolkit.com/>.

This concise and flexible core textbook integrates a design thinking approach, rhetorical strategies, and a global perspective to help students succeed as technical and professional communicators in today's multimodal, mobile, and global community. Design thinking and good communication practices are rooted in empathy and human values. The integrated approach fosters students' ability to address the complex problems they will face in their careers, where they will collaborate with people who present diverse expertise, cultures, languages, and values. This book introduces the knowledge and skills as well as agile activities that help students communicate on projects within local and global communities. Parts 1 and 2 introduce the strategies for design thinking, audience analysis, communicating ethically, collaborating professionally, and managing projects to define problems and

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implement solutions. In Parts 3 and 4, students learn to compose content in text and visuals. They learn to structure and deliver content by choosing the right genre and selecting effectively from the communication options available in today's multimodal environment. Designing Technical and Professional Communication serves as a flexible core textbook for technical and professional communication courses. An instructor's manual containing exercises, sample syllabus, and guidance for teaching in a variety of settings is available online at www.routledge.com/9780367549602.

Security and Loss Prevention: An Introduction, Seventh Edition, provides introductory and advanced information on the security profession. Security expert, Phil Purpura, CPP, includes updates on security research, methods, strategies, technologies, laws, issues, statistics and career options, providing a comprehensive and interdisciplinary book that draws on many fields of study for concepts, strategies of protection and research. The book explains the real-world challenges facing security professionals and offers options for planning solutions. Linking physical security with IT security, the book covers internal and external threats to people and assets and private and public sector responses and issues. As in previous editions, the book maintains an interactive style that includes examples, illustrations, sidebar questions, boxed topics, international perspectives and web exercises. In addition, course instructors can download ancillaries, including an instructor's manual with outlines of chapters, discussion topics/special projects, essay questions, and a test bank and PowerPoint presentation for each chapter. Covers topics including Enterprise Security Risk Management, resilience, the insider threat, active assailants, terrorism, spies, the Internet of things, the convergence of physical security with IT security, marijuana legalization, and climate change. Emphasizes critical

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thinking as a tool for security and loss prevention professionals who must think smarter as they confront a world filled with many threats such as violence, cyber vulnerabilities, and security itself as a soft target. Utilizes end-of-chapter problems that relate content to real security situations and issues. Serves both students and professionals interested in security and loss prevention for a wide variety of operations—industrial, critical infrastructure sectors, retail, healthcare, schools, non-profits, homeland security agencies, criminal justice agencies, and more.

Visible Light Communications Theory and Applications CRC Press

Communication Technology Update and Fundamentals, now in its 17th edition, has set the standard as the single best resource for students and professionals looking to brush up on how communication technologies have developed, grown, and converged, as well as what's in store for the future. The book covers the fundamentals of communication technology in five chapters that explain the communication technology ecosystem, its history, theories, structure, and regulations. Each chapter is written by experts who each provide a snapshot of an individual field. The book also dives into the latest developments in electronic mass media, computers, consumer electronics, networking, and telephony. Together, these updates provide a broad overview of these industries and examine the role communication technologies play in our everyday lives. In addition to substantial updates to each chapter, the 17th edition includes the first-ever chapter on Artificial Intelligence; updated user data in every chapter; an overview of industry structure, including recent and proposed mergers and acquisitions; and sidebars exploring sustainability and relevance of each technology to Gen Z. Communication Technology Update and Fundamentals continues to be the industry-leading resource for both

students and professionals seeking to understand how communication technologies have developed and where they are headed.

Compared to traditional electrical filaments, arc lamps, and fluorescent lamps, solid-state lighting offers higher efficiency, reliability, and environmentally friendly technology. LED / solid-state lighting is poised to take over conventional lighting due to cost savings—there is pretty much no debate about this. In response to the recent activity in this field, *Fundamentals of Solid-State Lighting: LEDs, OLEDs, and Their Applications in Illumination and Displays* covers a range of solid-state devices, technologies, and materials used for lighting and displays. It also examines auxiliary but critical requirements of efficient applications, such as modeling, thermal management, reliability, and smart lighting. The book discusses performance metrics of LEDs such as efficiency, efficacy, current–voltage characteristics, optical parameters like spectral distribution, color temperature, and beam angle before moving on to luminescence theory, injection luminescence, radiative and non-radiative recombination mechanisms, recombination rates, carrier lifetimes, and related topics. This lays down the groundwork for understanding LED operation. The book then discusses energy gaps, light emission, semiconductor material, special equipment, and laboratory facilities. It also covers production and applications of high-brightness LEDs (HBLEDs) and organic LEDs (OLEDs). LEDs represent the landmark development in lighting since the invention of electric lighting, allowing us to create unique, low-energy lighting solutions, not to talk about their minor maintenance expenses. The rapid strides of LED lighting technology over the last few years have changed the dynamics of the global lighting market, and LEDs are expected to be the mainstream light source in the near future. In a nutshell, the book traces the advances in LEDs, OLEDs, and

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their applications, and presents an up-to-date and analytical perspective of the scenario for audiences of different backgrounds and interests.

Despite being 2000 years old, cryptography is still a very active field of research. New needs and application fields, like privacy, the Internet of Things (IoT), physically unclonable functions (PUFs), post-quantum cryptography, and quantum key distribution, will keep fueling the work in this field. This book discusses quantum cryptography, lightweight cryptography for IoT, PUFs, cryptanalysis, and more. It provides a snapshot of some recent research results in the field, providing readers with some useful tools and stimulating new ideas and applications for future investigation.

This book is for cybersecurity leaders across all industries and organizations. It is intended to bridge the gap between the data center and the board room. This book examines the multitude of communication challenges that CISOs are faced with every day and provides practical tools to identify your audience, tailor your message and master the art of communicating. Poor communication is one of the top reasons that CISOs fail in their roles. By taking the step to work on your communication and soft skills (the two go hand-in-hand), you will hopefully never join their ranks. This is not a “communication theory” book. It provides just enough practical skills and techniques for security leaders to get the job done. Learn fundamental communication skills and how to apply them to day-to-day challenges like communicating with your peers, your team, business leaders and the board of directors. Learn how to produce meaningful metrics and communicate before, during and after an incident. Regardless of your role in Tech, you will find something of value somewhere along the way in this book. This book outlines the underlying principles on which interior lighting should be based,

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provides detailed information on the lighting hardware available today and gives guidance for the design of interior lighting installations resulting in good visual performance and comfort, alertness and health. The book is divided into three parts. Part One discusses the fundamentals of the visual and non-visual mechanisms and the practical consequences for visual performance and comfort, for sleep, daytime alertness and performance, and includes chapters on age effects, therapeutic effects and hazardous effects of lighting. Part Two deals with the lighting hardware: lamps (with emphasis on LEDs), gear, drivers and luminaires including chapters about lighting controls and LEDs beyond lighting. Part Three is the application part, providing the link between theory and practice and supplying the reader with the knowledge needed for lighting design. It describes the relevant lighting criteria for good and efficient interior lighting and discusses the International, European and North American standards and recommendations for interior lighting. A particular focus is on solid state light sources (LEDs) and the possibility to design innovative, truly-sustainable lighting installations that are adaptable to changing circumstances. The design of such installations is difficult and the book offers details of the typical characteristics of the many different solid state light sources, and of the aspects determining the final quality of interior lighting. Essential reading for interior lighting designers, lighting engineers and architects, the book will also be a useful reference for researchers and students. Reviews of Road Lighting by the same author: "If you are going to design streetlighting, you must read this book....a solid, comprehensive textbook written by an acknowledged expert in the field – if you have a query about any aspect of streetlighting design, you will find the answer here." – LUX, August 2015 "...a really comprehensive book dealing with every aspect of the subject well...essential text for reference

on this subject” – Lighting Journal, March 2015

This fully revised third edition brings a fresh approach to the fundamentals of mass media and communication law in a presentation that undergraduate students find engaging and accessible. Designed for students of communication that are new to law, this volume presents key principles and emphasizes the impact of timely, landmark cases on today’s media world, providing an applied learning experience. This new edition offers expanded coverage of digital media law and social media, a wealth of new case studies, expanded discussions of current political, social, and cultural issues, and new features focused on ethical considerations and on international comparative law. Communication Law serves as a core textbook for undergraduate courses in communication and mass media law. Online resources for instructors, including an Instructor’s Manual, Test Bank, and PowerPoint slides, are available at: www.routledge.com/9780367546694

The urgent need to keep pace with the accelerating globalization of manufacturing in the 21st century has produced rapid advancements in technology, research and innovation. This book presents the proceedings of the 16th International Conference on Manufacturing Research incorporating the 33rd National Conference on Manufacturing Research (ICMR 2018), held in Skövde, Sweden, in September 2018. The aim of the conference is to create a friendly and inclusive environment, bringing together researchers, academics and industrialists with practical and theoretical knowledge to share and discuss emerging trends and new challenges. The book is divided into 12 parts, covering areas such as the manufacturing process; robots; product design and development; smart manufacturing; and lean, among others. Covering both cutting-edge research and recent industrial applications, the book will appeal to all those with

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an interest in recent advances in manufacturing technology.

This book written for students of electronics and communication, students of computer science and communications engineers addresses topics such as Introduction of CRN, Advanced spectrum sensing techniques, Cooperative sensing techniques, Distributed sensing techniques, Issues in advanced sensing techniques, and Applications of 5G Networks. It provides new algorithms, explores recent results, and evaluates the performance of technologies in use in this area. It also provides new research topics and sensing techniques related to 5G networks for researchers.

With the growing popularity of wireless networks in recent years, the need to increase network capacity and efficiency has become more prominent in society. This has led to the development and implementation of heterogeneous networks. Resource Allocation in Next-Generation Broadband Wireless Access Networks is a comprehensive reference source for the latest scholarly research on upcoming 5G technologies for next generation mobile networks, examining the various features, solutions, and challenges associated with such advances. Highlighting relevant coverage across topics such as energy efficiency, user support, and adaptive multimedia services, this book is ideally designed for academics, professionals, graduate students, and professionals interested in novel research for wireless innovations. Is consciousness like an iceberg? Does advertising lead to the commodification of humans? What is the hidden meaning of fairy tales? In 50 Ways to Understand Communication, Arthur Asa Berger familiarizes readers with important concepts written by leading communication and cultural theorists, such as Saussure, Lévi-Strauss, de Certeau, Lasswell, McLuhan, Postman, and many others. Organized in fifty short segments, this concise guide covers a wide range of

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important ideas from psychoanalysis and semiology to humor, "otherness," and nonverbal communication. Berger's clear explanations and examples surround this assortment of influential writing, walking the uninitiated through these sometimes dense theoretical works. His selections and commentary will challenge readers to reconsider the role of communication in our culture. This engaging, accessible book is essential for students of communication and anyone interested in how we communicate in a world of rapidly changing media.

Visible Light Communications, written by leading researchers, provides a comprehensive overview of theory, stimulation, design, implementation, and applications. The book is divided into two parts – the first devoted to the underlying theoretical concepts of the VLC and the second part covers VLC applications. Visible Light Communications is an emerging topic with multiple functionalities including data communication, indoor localization, 5G wireless communication networks, security, and small cell optimization. This concise book will be of valuable interest from beginners to researchers in the field.

Using Italian Vocabulary provides the student of Italian with an in-depth, structured approach to the learning of vocabulary. It can be used for intermediate and advanced undergraduate courses, or as a supplementary manual at all levels - including elementary level - to supplement the study of vocabulary. The book is made up of twenty units covering topics that range from clothing and jewellery, to politics and environmental issues, with each unit consisting of words and phrases that have been organized thematically and according to levels so as to facilitate their acquisition. The book will enable students to acquire a comprehensive control of both concrete and abstract vocabulary allowing them to carry out essential communicative and interactional tasks. • A practical topic-based textbook that can be inserted

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- into all types of course syllabi • Provides exercises and activities for classroom and self-study
- Answers are provided for a number of exercises

The rise of intelligence and computation within technology has created an eruption of potential applications in numerous professional industries. Techniques such as data analysis, cloud computing, machine learning, and others have altered the traditional processes of various disciplines including healthcare, economics, transportation, and politics. Information technology in today's world is beginning to uncover opportunities for experts in these fields that they are not yet aware of. The exposure of specific instances in which these devices are being implemented will assist other specialists in how to successfully utilize these transformative tools with the appropriate amount of discretion, safety, and awareness. Considering the level of diverse uses and practices throughout the globe, the fifth edition of the Encyclopedia of Information Science and Technology series continues the enduring legacy set forth by its predecessors as a premier reference that contributes the most cutting-edge concepts and methodologies to the research community. The Encyclopedia of Information Science and Technology, Fifth Edition is a three-volume set that includes 136 original and previously unpublished research chapters that present multidisciplinary research and expert insights into new methods and processes for understanding modern technological tools and their applications as well as emerging theories and ethical controversies surrounding the field of information science. Highlighting a wide range of topics such as natural language processing, decision support systems, and electronic government, this book offers strategies for implementing smart devices and analytics into various professional disciplines. The techniques discussed in this publication are ideal for IT professionals, developers, computer scientists,

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practitioners, managers, policymakers, engineers, data analysts, and programmers seeking to understand the latest developments within this field and who are looking to apply new tools and policies in their practice. Additionally, academicians, researchers, and students in fields that include but are not limited to software engineering, cybersecurity, information technology, media and communications, urban planning, computer science, healthcare, economics, environmental science, data management, and political science will benefit from the extensive knowledge compiled within this publication.

This two volume set constitutes the refereed proceedings of the 14th EAI International Conference on Communications and Networking, ChinaCom 2019, held in November/December 2019 in Shanghai, China. The 81 papers presented were carefully selected from 162 submissions. The papers are organized in topical sections on Internet of Things (IoT), antenna, microwave and cellular communication, wireless communications and networking, network and information security, communication QoS, reliability and modeling, pattern recognition and image signal processing, and information processing.

The two-volume set LNCS 12615 + 12616 constitutes the refereed proceedings of the 12th International Conference on Intelligent Human Computer Interaction, IHCI 2020, which took place in Daegu, South Korea, during November 24-26, 2020. The 75 full and 18 short papers included in these proceedings were carefully reviewed and selected from a total of 185 submissions. The papers were organized in topical sections named: cognitive modeling and systems; biomedical signal processing and complex problem solving; natural language, speech, voice and study; algorithms and related applications; crowd sourcing and information analysis; intelligent usability and test system; assistive living; image processing and deep

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learning; and human-centered AI applications.

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