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 Handbook of Optics, Third Edition Volume II: Design, Fabrication and Testing, Sources and Detectors, Radiometry and Photometry
 Indoor Thermal Comfort
 LICHT 2016 : Karlsruhe, 25. - 28. September ; Tagungsband - Proceedings ; [22. Gemeinschaftstagung = 22nd Associations' Meeting]
 Daylight Science and Daylighting Technology
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 Sustainable Indoor Lighting
 Energy Autonomous Micro and Nano Systems
 Handbook of Optics Third Edition, 5 Volume Set
 Introduction to Architectural Science
 Ye Heart of a Man
 Digital Color Imaging Handbook
 The Indoor Environment Handbook

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Conference Proceedings Springer
 Nature
 Practical information on designing sustainable, energy-efficient building facades As energy and other natural resources are being depleted, it has become clear that technologies and strategies that allow us to maintain our satisfaction with interior environments while consuming less of these resources are major objectives of contemporary facade design. Sustainable Facades focuses on the strategies and approaches for designing sustainable, high-performance building facades, and

provides technical guidance for architects and designers. This timely and useful guide presents strategies and technical guidelines for designing environmentally sensitive, energy-efficient facades based on scientific principles. It provides climate-specific approaches for minimizing energy consumption, analyzes the thermal behavior of different facade systems and materials, and illustrates with case studies how these approaches have been implemented on architectural projects. It also discusses emerging facade technologies, materials, and systems. Topics covered in this unique and indispensable guide include: Climate-based design approaches for high-performance facades Characteristics of sustainable facades: energy efficiency, thermal behavior, and moisture

resistance Designing for thermal comfort, lighting and glare control, and acoustic quality Emerging technologies in facade design, including smart materials, double-skin facades, and facades as energy generators Case studies on building orientation and facade design, tectonic sun exposure control, external shading elements, and more
[Current Law Case Citator](#) MDPI
 This book brings together concepts from the building, environmental, behavioural and health sciences to provide an interdisciplinary understanding of office and workplace design. Today, with changes in the world of work and the relentless surge in technology, offices have emerged as the repositories of organizational symbolism, denoted by the spatial design of offices, physical settings

and the built environment (architecture, urban locale). Drawing on Euclidian geometry that quantifies space as the distance between two or more points, a body of knowledge on office buildings, the concept of office and office space, and the interrelationships of spatial and behavioural attributes in office design are elucidated. Building and office work-related illnesses, namely sick building syndrome and ailments arising from the indoor environment, and the menace of musculoskeletal disorders are the alarming manifestations that critically affect employee satisfaction, morale and work outcomes. With a focus on office ergonomics, the book brings the discussion on the fundamentals of work design, with emphasis on computer workstation users. Strategic guidance of lighting systems and visual performance in workplaces are directed for better application of ergonomics and improvement in office indoor environment. It discusses the profiles of bioclimatic, indoor air quality, ventilation intervention, lighting and acoustic characteristics in office buildings. Emphasis has been given to the energy performance of buildings, and contemporary perspectives of building sustainability, such as green office building assessment schemes, and national and international building-related standards and codes. Intended for students and professionals from ergonomics, architecture, interior design, as well as construction engineers, health care professionals, and office planners, the book brings a unified overview of the health, safety and environment issues associated with the design of office buildings.

International Journal of Lighting

Research and Technology WIT Press
Digital technology now enables unparalleled functionality and flexibility in the capture, processing, exchange, and output of color images. But harnessing its potential requires knowledge of color science, systems, processing algorithms, and device characteristics-topics drawn from a broad range of disciplines. One can acquire the requisite background with an armload of physics, chemistry, engineering, computer science, and mathematics books and journals- or one can find it here, in the Digital Color Imaging Handbook. Unprecedented in scope, this handbook presents, in a single concise and authoritative publication, the elements of these diverse areas relevant to digital color imaging. The first three chapters cover the basics of color vision, perception, and physics that underpin digital color imaging. The remainder of the

text presents the technology of color imaging with chapters on color management, device color characterization, digital halftoning, image compression, color quantization, gamut mapping, computationally efficient transform algorithms, and color image processing for digital cameras. Each chapter is written by world-class experts and largely self-contained, but cross references between chapters reflect the topics' important interrelations. Supplemental materials are available for download from the CRC Web site, including electronic versions of some of the images presented in the book.

Emerging Networking in the Digital Transformation Age CRC Press
The new edition of the popular introduction to architectural lighting design, covering all stages of the lighting design process

Designing with Light: The Art, Science, and Practice of Architectural Lighting Design, Second Edition, provides students and professionals alike with comprehensive understanding of the use of lighting to define and enhance a space. This accessible, highly practical textbook covers topics such as the art and science of color, color rendering and appearance, lighting control systems, building codes and standards, and sustainability and energy conservation. Throughout the text, accomplished lighting designer and instructor Jason Livingston offers expert insights on the use of color, the interaction between light and materials, the relation between light, vision, and psychology, and more. Fully revised and updated throughout, the second edition features new chapters on design thinking, common lighting techniques, and lighting economics. Expanded sections on aesthetics, controlling LEDs, light, and health, designing with light, and color mixing luminaires are supported by new case studies, examples, and exercises. Featuring hundreds of high-quality color images and illustrations, *Designing with Light*: Provides systematic guidance on all aspects of the lighting design process Thoroughly covers color and light, including color perception, color rendering, and designing with colored light Explains the theory behind the practice of architectural lighting design Contains information on cost estimating, life cycle analysis, voluntary energy programs, and professional lighting design credentials Includes an instructor resource site with PowerPoint presentations, test questions, and suggested assignments for each chapter, and also a student site with flashcards, self-evaluation tests, and helpful calculators. *Designing with Light:*

The Art, Science, and Practice of Architectural Lighting Design, Second Edition is perfect for architecture, interior design, and electrical engineering programs that include courses on lighting design, as well as professionals looking for a thorough and up-to-date desk reference. [Visual and Non-Visual Effects of Light](#) Springer

Providing a complete and in-depth overview of the available knowledge in the area of low energy and low carbon architecture. The scope of this edited book includes several important topics ranging from chapters giving a broad view of the progressing models in ecologically responsible environments to other chapters focussing on recent advances in de

Photonics Applications in Astronomy, Communications, Industry, and High-energy Physics Experiments Routledge

Encompassing a thorough survey of the lighting techniques applied to internal illumination characterized by high efficiency, optimized color and architectural integration, a consolidated summary of the latest scientific, technical and architectural research is presented in order to give the reader an overview of the different themes with their interactions and mutual effects. This book describes light principles, methodologies and realisations for indoor illumination at low consumption. Power efficiency, color characteristics and architectural aspects are analyzed in terms of their practical application, with the interactions between scientific, technological and architectural features considered in order to supply a complete overview, which can be read both at technical level and at user level. Introducing photometric and radiometric quantities and laws, the book first discusses tests and measurements assessing lighting and color characteristics before examining in detail artificial light sources with particular attention paid to measures to reduce consumption and optimize efficiency. Key sources are illustrated with producers and suppliers with technical details and use specifications included. Serving to maximize reader insights into the use of sunlight - considering light transfer, application to indoor illumination and in particular to museum lighting - in the color rendering properties of light sources and the architectural aspects for natural indoor lighting, the final part of this boo collects other related but important elements including architectural issues, environmental integration and the possibility of changing the light color by introducing suitable coatings. The

physiological effects of internal illumination quality on user comfort is discussed and several possibilities for energy saving using domotics are outlined.

Colour Engineering Taylor & Francis

The most comprehensive and up-to-date optics resource available Prepared under the auspices of the Optical Society of America, the five carefully architected and cross-referenced volumes of the Handbook of Optics, Third Edition, contain everything a student, scientist, or engineer requires to actively work in the field. From the design of complex optical systems to world-class research and development methods, this definitive publication provides unparalleled access to the fundamentals of the discipline and its greatest minds. Individual chapters are written by the world's most renowned experts who explain, illustrate, and solve the entire field of optics. Each volume contains a complete chapter listing for the entire Handbook, extensive chapter glossaries, and a wealth of references. This pioneering work offers unprecedented coverage of optics data, techniques, and applications. Volume II covers design, fabrications, testing, sources, detectors, radiometry, and photometry.

The Outdoor Lighting Guide Springer Science & Business Media

Constituting the first holistic overview including practical remedies, this handbook provides the background needed by anyone grappling with the complex issue of outdoor lighting and its effects. It describes not only the problems that astronomers and other night sky observers face in reducing the problems of information loss due to light pollution, as well as the problems lighting technologists face in optimising outdoor lighting installations that cause little or no light pollution. The first part is directed to decision makers and managers of outdoor space and covers the areas of general interest, culminating in recommendations to reduce the impact of light pollution. The second part is directed primarily to scientists and engineers, as a support to the design and maintenance of outdoor lighting installations, with special reference to astronomical observations. Elaborating issues from the first part, these contributions include examples that refer to specific outdoor lighting projects and to more general policy and educational measures. Written for designers of lighting equipment and managers of astronomical observatories, but also aimed at the authorities and decision makers responsible for the organization and maintenance of the public space, it will serve a good purpose

in graduate or postgraduate curricula for scientists, engineers, economists and law students. This handbook fills the gap that exists between astronomical textbooks, engineering texts and popular brochures about light pollution.

The Colour, Light and Contrast Manual Thomas Telford

As the century begins, natural resources are under increasing pressure, threatening public health and development. As a result, the balance between man and nature has been disrupted, with climatic changes whose effects are starting to be irreversible. Due to the relationship between the quality of the indoor built environment and its energy demand, thermal comfort issues are still relevant in the disciplinary debate. This is also because the indoor environment has a potential impact on occupants' health and productivity, affecting their physical and psychological conditions. To achieve a sustainable compromise in terms of comfort and energy requirements, several challenging questions must be answered with regard to design, technical, engineering, psychological, and physiological issues and, finally, potential interactions with other IEQ issues that require a holistic way to conceive the building envelope design. This Special Issue collected original research and review articles on innovative designs, systems, and/or control domains that can enhance thermal comfort, work productivity, and wellbeing in a built environment, along with works considering the integration of human factors in buildings' energy performance.

Discomfort Glare in Interior Lighting Yale University Press

This book outlines the underlying principles on which interior lighting should be based, 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

Sustainable Facades McGraw Hill Professional

This book covers a range of leading-edge topics. It is suitable for teaching specialists for advanced lectures in the domains of systems architecture and distributed platforms. Furthermore, it serves as a basis for undergraduates as well as an inspiration for interesting postgraduates, looking for new challenges. It addresses a holistic view of QoS, which becomes nowadays via Digital Transformations less technically and more socially driven. This includes IoT, energy efficiency, secure transactions, blockchains, and smart contracting. Under the term Emerging Networking (EmN), we cover the steadily growing diversity of smart mobile and robotic apps and unmanned scenarios (UAV). EmN supports distributed intelligence across the combined mobile, wireless, and fixed networks in the edge-to-cloud continuum. The 6G driving factors and potentials in the mid-term are examined. Operative (emergency) networking, which assists rescue troops at sites, also belongs to the above-mentioned problems. The EmN architecture includes the components of SDN, blockchain, and AI with efficient slicing and cloud support. The design peculiarities in dynamically changing domains, such as Smart Shopping/Office/Home, Context-Sensitive

Intelligent apps, are discussed. Altogether, the provided content is technically interesting while still being rather practically oriented and therefore straightforward to understand. This book originated from the close cooperation of scientists from Germany, Ukraine, Israel, Switzerland, Slovak Republic, Poland, Czech Republic, South Korea, China, Italy, North Macedonia, Azerbaijan, Kazakhstan, France, Latvia, Greece, Romania, USA, Finland, Morocco, Ireland, and the United Kingdom. We wish all readers success and lots of inspiration from this useful book!

Outdoor Lighting: Physics, Vision and Perception McGraw Hill Professional Winner of the Choice Outstanding Academic Titles of 2010 award. Ensuring that buildings are healthy and comfortable for their occupants is a primary concern of all architects and building engineers. This highly practical handbook will help make that process more efficient and effective. It begins with a guide to how the human body and senses react to different indoor environmental conditions, together with basic information on the parameters of the indoor environment and problems that can occur. It then moves on to give a background to the development of the study and control of the indoor environment, examining the main considerations (including thermal, lighting, indoor air and sound-related aspects) for a healthy and comfortable indoor environment and discussing the drivers for change in the field. The final section presents a new approach towards health and comfort in the indoor environment, where meeting the wishes and demands of the occupants with a holistic strategy becomes the over-riding priority. The book is filled with useful facts, figures and analysis, and practical methods that designers who are keen to assess and improve the user experience of their buildings will find invaluable.

Low Energy Low Carbon Architecture Society of Photo Optical

The introduction of artificial lighting extends the time of wakefulness after dark and enables work at night, thus disturbing the human circadian rhythm. The understanding of the physiological mechanisms of visual and non-visual systems may be important for the development and use of proper light infrastructure and light interventions for different workplace settings, especially for shift work conditions. Visual and Non-Visual Effects of Light: Working Environment and Well-Being presents the impact of lighting in the working environment on human health, well-being and visual performance. The physiological

explanation of the visual and non-visual effects of light on humans which discusses the biological bases of image and non-image forming vision at the cellular level may be of particular interest to any professional in the field of medicine, physiology, and biology. It is one of the intentions of this book to put forward some recommendations and examples of lighting design which take into account both the visual and non-visual effects of light on humans. These may be of particular interest to any professional in the field of lighting, occupational safety and health, and interior design. "What effects on health can a light 'overdose' or light deficiency have? What is bad light? The authors of the monograph provide answers to these questions. Just as for a physicist, the dual nature of light comprises an electromagnetic wave and a photon, the duality of light for a physician comprises visual and non-visual effects." --

-----Prof Jacek Przybylski, Medical University of Warsaw "This is a unique publication in the field of lighting technology. The authors have skillfully combined both the technical and biomedical aspects involved, which is unprecedented in the literature available. As a result, an important study has been created for many professional groups, with a significant impact on the assessment of risks associated with LED sources." -----

-----Prof Andrzej Zając, Military University of Technology, Warsaw
Designing with Light Springer Science & Business Media

The most comprehensive and up-to-date optics resource available Prepared under the auspices of the Optical Society of America, the five carefully architected and cross-referenced volumes of the Handbook of Optics, Third Edition, contain everything a student, scientist, or engineer requires to actively work in the field. From the design of complex optical systems to world-class research and development methods, this definitive publication provides unparalleled access to the fundamentals of the discipline and its greatest minds. Individual chapters are written by the world's most renowned experts who explain, illustrate, and solve the entire field of optics. Each volume contains a complete chapter listing for the entire Handbook, extensive chapter glossaries, and a wealth of references. This pioneering work offers unprecedented coverage of optics data, techniques, and applications. Volume I covers geometrical and physical optics, polarized light, components, and instruments. Volume II covers design, fabrications, testing,

sources, detectors, radiometry, and photometry. Volume III, all in full color, covers vision and vision optics. Volume IV covers optical properties of materials, nonlinear optics, and quantum optics. Volume V covers atmospheric optics, modulators, fiber optics, and x-ray and neutron optics. Visit www.HandbookofOpticsOnline.com to search all five volumes and download a comprehensive index.

Creating the Productive Workplace John Wiley & Sons

Providing a detailed overview of the fundamentals and latest developments in the field of energy autonomous microsystems, this book delivers an in-depth study of the applications in the fields of health and usage monitoring in aeronautics, medical implants, and home automation, drawing out the main specifications on such systems. Introductory information on photovoltaic, thermal and mechanical energy harvesting, and conversion, is given, along with the latest results in these fields. This book also provides a state of the art of ultra-low power sensor interfaces, digital signal processing and wireless communications. In addition, energy optimizations at the sensor node and sensors network levels are discussed, thus completing this overview. This book details the challenges and latest techniques available to readers who are interested in this field. A major strength of this book is that the first three chapters are application oriented and thus, by setting the landscape, introduce the technical chapters. There is also a good balance between the technical application, covering all the system-related aspects and, within each chapter, details on the physics, materials and technologies associated with electronics. Contents Introduction. Introduction to Energy Autonomous Micro & Nano Systems and Presentation of Contributions, Marc Belleville and Cyril Condemine. 1. Sensors at the Core of Building Control, Gilles Chabanis, Laurent Chiesi, Hynek Raisigel, & Isabelle Ressejac and Véronique Boutin. 2. Toward Energy Autonomous Medical Implants, Raymond Campagnolo and Daniel Kroiss. 3. Energy Autonomous Systems in Aeronautic Applications, Thomas Becker, Jirka Kluge and Martin Kluge. 4. Energy Harvesting by Photovoltaic Effect, Emmanuelle Rouvière, Simon Perraud, Cyril Condemine and Guy Waltisperger. 5. Mechanical Energy Harvesting, Ghislain Despesse, Jean Jacques Chaillout, & Sébastien Boisseau and Claire Jean-Mistral. 6. Thermal Energy Harvesting, Tristan Caroff,

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Light in Engineering, Architecture and the Environment Springer Science & Business Media

The importance of lighting for the safety of road users, the convenience of people of all levels of ability, and the prevention of street crime can hardly be exaggerated. Added to this, the considerable number of recent developments and the complexity of the issues involved in effective and environmentally acceptable road lighting make this broadly-based treatment of the subject both timely and welcome. Dr Ir Schreuders aim is to clarify the subject for all those involved in road lighting, from planning, through design and engineering, to implementation and maintenance.

Handbook of Optics, Third Edition Volume II: Design, Fabrication and Testing, Sources and Detectors, Radiometry and Photometry CRC Press

The Wessex Institute of Technology has for years been convening conferences on sustainable architecture and planning, design in nature, heritage architecture, and environmental health. With the growing importance of lighting in the creation of better, healthier environments, the enhancement of heritage architecture, and the recovery of urban areas, as well as new developments in more sustainable lighting it became clear that a conference focusing on lighting issues would be

useful. This book contains the papers to be presented at the first International Conference on Lighting in Engineering, Architecture and the Environment, discussing the latest developments in a variety of topics related to light and illumination, from its engineering aspects to its use in art and architecture and the effect of light on living systems and human health. Ranging from discussions of technical issues regarding equipment design and light measurement to human perception of light and the effect of light on human health, the book will be of interest to architects, planners, environmental health experts, and stage designers in academia, industry and government, as well as colleagues discussing the latest developments in a variety of topics related to light and illumination, from its engineering aspects to its use in art and architecture and the effect of light on living systems and human health.

Indoor Thermal Comfort Springer

Annotation In this unique investigation of the everyday lives of men in colonial Massachusetts and Connecticut, Lisa Wilson brings to life the domestic world of pre-Revolutionary New England. She finds that colonial men spent most of their time in a multigendered home environment and, unlike the self-reliant men of the next century, sought interdependence with family and community.

LICHT 2016 : Karlsruhe, 25. - 28. September ; Tagungsband - Proceedings ; [22. Gemeinschaftstagung = 22nd Associations' Meeting] Taylor & Francis

The built environment affects our physical, mental and social well-being. Here renowned professionals from practice and academia explore the evidence from basic research as well as case studies to test this belief. They show that many elements in the built environment contribute to establishing a milieu which helps people to be healthier and have the energy to concentrate while being free to be creative. The health and well-being

agenda pervades society in many different ways but we spend much of our lives in buildings, so they have an important role to play within this total picture. This demands us to embrace change and think beyond the conventional wisdom while retaining our respect for it. Creating the Productive Workplace shows how we need to balance the needs of people and the ever-increasing enabling technologies but also to take advantage of the healing powers of Nature and let them be part of environmental design. This book aims to lead to more human-centred ways of designing the built environment with deeper meaning and achieve healthier and more creative, as well as more productive places to work.

Daylight Science and Daylighting Technology Routledge

As part of Daylight Europe, the daylighting behaviour of 60 buildings was observed and measured during a three year period. Buildings of many different types, sizes and ages were included - from offices to museums, libraries, churches, houses, airports and factories; from Classical buildings to modern constructions, and from a small single room to an office of over 100,000 square meters. The results of the study of each building are presented, extensively illustrated in colour, with the unusual features and main lessons highlighted. The book also includes details of the monitoring procedures, the results of and comparisons with simulations, the outcome of post-occupancy evaluation, and a summary of the major findings. These show the extraordinary potential of daylighting techniques to improve amenity and energy performance for the benefit of the occupants and building managers. They also demonstrate how often opportunities are missed, and the frequency of problems of overheating or glare. Above all, they demonstrate the beauty, elegance and scope of daylight design.