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KEY=HERBERT - ROCCO SANTOS

OPTICAL COMMUNICATIONS RULES OF THUMB

McGraw Hill Professional **This engineering tool provides over 200 time and cost saving rules of thumb--short cuts, tricks, and methods that optical communications veterans have developed through long years of trial and error. * DWDM (Dense Wavelength Division Multiplexing) and SONET (Synchronous Optical NETWORK) rules * Information Transmission, fiber optics, and systems rules**

HOW TO WRITE A GOOD SCIENTIFIC PAPER

PM286

Many scientists and engineers consider themselves poor writers or find the writing process difficult. The good news is that you do not have to be a talented writer to produce a good scientific paper, but you do have to be a careful writer. In particular, writing for a peer-reviewed scientific or engineering journal requires learning and executing a specific formula for presenting scientific work. This book is all about teaching the style and conventions of writing for a peer-reviewed scientific journal. From structure to style, titles to tables, abstracts to author lists, this book gives practical advice about the process of writing a paper and getting it published.

COMPUTATIONAL FOURIER OPTICS

A MATLAB TUTORIAL

SPIE-International Society for Optical Engineering **Computational Fourier Optics is a text that shows the reader in a tutorial form how to implement Fourier optical theory and analytic methods on the computer. A primary objective is to give students of Fourier optics the capability of programming their own basic wave optic beam propagations and imaging simulations. The book will also be of interest to professional engineers and physicists learning Fourier optics simulation techniques-either as a self-study text or a text for a short course. For more advanced study, the latter chapters and appendices provide methods and examples for modeling beams and pupil functions with more complicated structure, aberrations, and partial coherence. For a student in a course on Fourier optics, this book is a concise, accessible, and practical companion to any of several excellent textbooks on Fourier optical theory.**

RAINBOWS, HALOS AND GLORIES

CUP Archive **Very Good, No Highlights or Markup, all pages are intact.**

ENGINEERED MATERIALS AND METAMATERIALS

DESIGN AND FABRICATION

SPIE-International Society for Optical Engineering **"The field of metamaterials arose from a deeper understanding of how electromagnetic waves interact with materials and subwavelength-scaled scattering structures. This opened up the field of metamaterials or engineered materials through advances in understanding how material properties not found in nature could be designed along with advances in fabrication capabilities. Metamaterial advances span the electromagnetic spectrum, with examples being more common at lower (e.g., microwave) frequencies. The microwave or x-band regime has proven to be a good testbed for the first generation of metamaterials, but recently we have seen optical and IR metamaterials emerging as well. The exploitation of these more complex material-wave interactions, based on arrangements of subwavelength scale components, has generated a lot of global activity. We can, in principle, engineer material properties to greatly extend those currently available. This tutorial text presents both the usual and unusual electromagnetic properties of materials, focusing especially man-made or engineered metamaterials. After a review of Maxwell's equations and material properties, the idea of resonant meta-atoms and composite media are introduced. The fabrication of metamaterials and the properties of negative index materials are explained. The difficulties associated with reducing the size of meta-atoms for use at optical frequencies are described, and the use of metamaterials for superresolution imaging is presented in some detail"--**

OPTICAL SCATTERING

MEASUREMENT AND ANALYSIS

Society of Photo Optical **The first edition of this book concentrated on relating scatter from optically smooth surfaces to the microroughness on those surfaces. After spending six years in the semiconductor industry, Dr. Stover has updated and expanded the third edition. Newly included are scatter models for pits and particles as well as the use of wafer scanners to locate and size isolated surface features. New sections cover the multimillion-dollar wafer scanner business, establishing that microroughness is the noise, not the signal, in these systems. Scatter measurements, now routinely used to determine whether small-surface features are pits or particles and inspiring new technology that provides information on particle material, are also discussed. These new capabilities are now supported by a series of international standards, and a new chapter reviews those documents. New information on scatter from optically rough surfaces has also been added. Once the critical limit is exceeded, scatter cannot be used to determine surface-roughness statistics, but considerable information can still be obtained - especially when measurements are made on mass-produced products. Changes in measurement are covered, and the reader will find examples of scatter measurements made using a camera for a fraction of the cost and in a fraction of the time previously possible. The idea of relating scatter to surface appearance is also discussed, and appearance has its own short chapter. After all, beauty is in the eye of the beholder, and what we see is scattered light.**

FUNDAMENTALS OF ANTENNAS

CONCEPTS AND APPLICATIONS

[SPIE Press Annotation](#) This tutorial explains antenna theory and operation and is intended for students, engineers, and researchers. Basic wire antennas and array antennas are described in detail and other types are introduced, including reflectors, lenses, horns, microstrip, Yagi, and frequency-independent antennas.

SUSTAINABLE NETWORKING FOR SCIENTISTS AND ENGINEERS

[SPIE-International Society for Optical Engineering](#)

FIELD GUIDE TO INFRARED SYSTEMS, DETECTORS, AND FPAS

[SPIE-International Society for Optical Engineering](#) "Field Guide to Infrared Systems, Detectors, and FPAs, Third Edition is devoted to fundamental background issues for optical detection processes. It compares the characteristics of cooled and uncooled detectors with an emphasis on spectral and blackbody responsivity, detectivity, as well as the noise mechanisms related to optical detection. It introduces the concepts of barrier infrared detector technologies, and encompasses the capabilities and challenges of third-generation infrared focal plane arrays as well as the advantages of using dual-band technology. The book combines numerous engineering disciplines necessary for the development of an infrared system. It considers the development of search infrared systems and specifies the main descriptors used to characterize thermal imaging systems. Furthermore, this guide clarifies, identifies, and evaluates the engineering tradeoffs in the design of an infrared system"--

EUV LITHOGRAPHY

[SPIE Press Editorial Review](#) Dr. Bakshi has compiled a thorough, clear reference text covering the important fields of EUV lithography for high-volume manufacturing. This book has resulted from his many years of experience in EUVL development and from teaching this subject to future specialists. The book proceeds from an historical perspective of EUV lithography, through source technology, optics, projection system design, mask, resist, and patterning performance, to cost of ownership. Each section contains worked examples, a comprehensive review of challenges, and relevant citations for those who wish to further investigate the subject matter. Dr. Bakshi succeeds in presenting sometimes unfamiliar material in a very clear manner. This book is also valuable as a teaching tool. It has become an instant classic and far surpasses others in the EUVL field. -- Dr. Akira Endo, Chief Development Manager, Gigaphoton Inc. Description Extreme ultraviolet lithography (EUVL) is the principal lithography technology aiming to manufacture computer chips beyond the current 193-nm-based optical lithography, and recent progress has been made on several fronts: EUV light sources, optics, optics metrology, contamination control, masks and mask handling, and resists. This comprehensive volume is comprised of contributions from the world's leading EUVL researchers and provides all of the critical information needed by practitioners and those wanting an introduction to the field. Interest in EUVL technology continues to increase, and this volume provides the foundation required for understanding and applying this exciting technology. About the editor of EUV Lithography Dr. Vivek Bakshi previously served as a senior member of the technical staff at SEMATECH; he is now president of EUV Litho, Inc., in Austin, Texas.

OPTICAL ARCHITECTURES FOR AUGMENTED-, VIRTUAL-, AND MIXED-REALITY HEADSETS

"This book is a timely review of the various optical architectures, display technologies, and building blocks for modern consumer, enterprise, and defense head-mounted displays for various applications, including smart glasses, smart eyewear, and virtual-reality, augmented-reality, and mixed-reality headsets. Special attention is paid to the facets of the human perception system and the need for a human-centric optical design process that allows for the most comfortable headset that does not compromise the user's experience. Major challenges--from wearability and visual comfort to sensory and display immersion--must be overcome to meet market analyst expectations, and the book reviews the most appropriate optical technologies to address such challenges, as well as the latest product implementations"--

OPTICAL IMAGING IN PROJECTION MICROLITHOGRAPHY

[SPIE Press](#) Here for the first time is an integrated mathematical view of the physics and numerical modeling of optical projection lithography that efficiently covers the full spectrum of the important concepts. Alfred Wong offers rigorous underpinning, clarity in systematic formulation, physical insight into emerging ideas, as well as a system-level view of the parameter tolerances required in manufacturing. Readers with a good working knowledge of calculus can follow the step-by-step development, and technologists can gather general concepts and the key equations that result. Even the casual reader will gain a perspective on the key concepts, which will likely help facilitate dialog among technologists.

OPTICAL LITHOGRAPHY

HERE IS WHY

[SPIE-International Society for Optical Engineering](#) This book is written for new and experienced engineers, technology managers, and senior technicians who want to enrich their understanding of the image formation physics of a lithographic system. Readers will gain knowledge of the basic equations and constants that drive optical lithography, learn the basics of exposure systems and image formation, and come away with a full understanding of system components, processing, and optimization. Readers will also get an overview of the outlook of optical lithography and means to enhance semiconductor manufacturing. This second edition blends the author's unique experience in research, teaching, and world-class high-volume manufacturing to add brand new material on proximity printing, as well as updated and expanded material on exposure systems, image formation, E-D methodology, hardware components, processing and optimization, and EUV and immersion lithographies.

PRACTICAL APPLICATIONS OF INFRARED THERMAL SENSING AND IMAGING EQUIPMENT

[SPIE Press](#) \- Preface - List of Figures - List of Tables - List of Acronyms and Abbreviations - Preface - Introduction - Basics of Noncontact Thermal Measurement - Matching the Instrument to the Application - Instruments Overview - Using IR Sensing and Imaging Instruments - Introduction to Applications - Plant Condition Monitoring and Predictive Maintenance - Buildings and Infrastructure - Materials Testing - Product and Process Monitoring Control - Night Vision, Security, and Surveillance - Life Sciences Thermography - Appendix A: Commercial Instrument Performance Characteristics - Appendix B: Manufacturers of IR Sensing and Imaging Instruments - Appendix C: Table of Generic Normal Emissivities of Materials - Appendix D: A Glossary of Terms for the Infrared Thermographer

OPTICAL ENGINEERING FUNDAMENTALS

[SPIE Press](#) This text aims to expose students to the science of optics and optical engineering without the complications of advanced physics and mathematical theory.

INTRODUCTION TO IMAGING SPECTROMETERS

[SPIE Press](#) The increased interest in imaging spectroscopy has arisen largely for technical reasons. This Tutorial Text first reviews the required background in optics, radiometry, imaging, spectral sensing and focal plane arrays. Then the principles of these subjects are applied to several specific problems to illustrate the way in which such instruments can be designed.

QUANTUM COMPUTATION AND QUANTUM INFORMATION

Cambridge University Press **First-ever comprehensive introduction to the major new subject of quantum computing and quantum information.**

MICROBOLOMETERS

FUNDAMENTALS, MATERIALS, AND RECENT DEVELOPMENTS

Woodhead Publishing **Microbolometers: Fundamentals, Materials, and Recent Developments** describes the fundamentals of microbolometers, their historic evolution, operational principles and material choices. It also explains the impact of materials on the processing and development of device characteristics. Sections address various aspects of optical properties and recommend models of properties of materials of interest for the fabrication of the uncooled microbolometers. In addition, the book presents two case studies, Honeywell and Texas Instruments, that focus on the design and manufacture of microbolometers. Finally, recent developments, applications, patents and future trends are presented. The chapter on patents will summarize the strengths and weaknesses of each of the technologies. “Please note that there is an error on the Dedication page, it should read: “To my sister, Math. G.Y. Premalatha, and my brother-in-law, the late Professor G.N. Yoganarasimhan, Professor of Water Resources Engineering and Management, for showing me the direction Describes the fundamentals of uncooled infrared detectors, operational principles and material approaches Includes case studies based on Honeywell and Texas Instruments’ work on microbolometers Provides analyses of current patents with a look towards their strengths and weaknesses

DIFFRACTIVE OPTICS

DESIGN, FABRICATION, AND TEST

SPIE Press **This book provides the reader with the broad range of materials that were discussed in a series of short courses presented at Georgia Tech on the design, fabrication, and testing of diffractive optical elements (DOEs). Although there are not long derivations or detailed methods for specific engineering calculations, the reader should be familiar and comfortable with basic computational techniques. This text is not a 'cookbook' for producing DOEs, but it should provide readers with sufficient information to assess whether this technology would benefit their work, and to understand the requirements for using the concepts and techniques presented by the authors.**

INTRODUCTION TO RADIOMETRY

SPIE Press **Radiometry is an essential part of the optical design of virtually every optical instrument, and key to many applications. It is also used to measure the radiation of various objects. This tutorial examines both the techniques of calculating radiative transfer and the measurement of fluxes and radiometric properties of various sorts.**

MISS PEREGRINE'S HOME FOR PECULIAR CHILDREN

Quirk Books **Read the #1 New York Times best-selling series before it continues in A Map of Days. Bonus features • Q&A with author Ransom Riggs • Eight pages of color stills from the film • Sneak preview of Hollow City, the next novel in the series A mysterious island. An abandoned orphanage. A strange collection of very curious photographs. It all waits to be discovered in Miss Peregrine’s Home for Peculiar Children, an unforgettable novel that mixes fiction and photography in a thrilling reading experience. As our story opens, a horrific family tragedy sets sixteen-year-old Jacob journeying to a remote island off the coast of Wales, where he discovers the crumbling ruins of Miss Peregrine’s Home for Peculiar Children. As Jacob explores its abandoned bedrooms and hallways, it becomes clear that the children were more than just peculiar. They may have been dangerous. They may have been quarantined on a deserted island for good reason. And somehow—impossible though it seems—they may still be alive. A spine-tingling fantasy illustrated with haunting vintage photography, Miss Peregrine’s Home for Peculiar Children will delight adults, teens, and anyone who relishes an adventure in the shadows. “A tense, moving, and wondrously strange first novel. The photographs and text work together brilliantly to create an unforgettable story.”—John Green, New York Times best-selling author of The Fault in Our Stars “With its X-Men: First Class-meets-time-travel story line, David Lynchian imagery, and rich, eerie detail, it’s no wonder Miss Peregrine’s Home for Peculiar Children has been snapped up by Twentieth Century Fox. B+”—Entertainment Weekly “‘Peculiar’ doesn’t even begin to cover it. Riggs’ chilling, wondrous novel is already headed to the movies.”—People “You’ll love it if you want a good thriller for the summer. It’s a mystery, and you’ll race to solve it before Jacob figures it out for himself.”—Seventeen**

PHOTONIC CRYSTALS

MOLDING THE FLOW OF LIGHT - SECOND EDITION

Princeton University Press **Since it was first published in 1995, Photonic Crystals has remained the definitive text for both undergraduates and researchers on photonic band-gap materials and their use in controlling the propagation of light. This newly expanded and revised edition covers the latest developments in the field, providing the most up-to-date, concise, and comprehensive book available on these novel materials and their applications. Starting from Maxwell's equations and Fourier analysis, the authors develop the theoretical tools of photonics using principles of linear algebra and symmetry, emphasizing analogies with traditional solid-state physics and quantum theory. They then investigate the unique phenomena that take place within photonic crystals at defect sites and surfaces, from one to three dimensions. This new edition includes entirely new chapters describing important hybrid structures that use band gaps or periodicity only in some directions: periodic waveguides, photonic-crystal slabs, and photonic-crystal fibers. The authors demonstrate how the capabilities of photonic crystals to localize light can be put to work in devices such as filters and splitters. A new appendix provides an overview of computational methods for electromagnetism. Existing chapters have been considerably updated and expanded to include many new three-dimensional photonic crystals, an extensive tutorial on device design using temporal coupled-mode theory, discussions of diffraction and refraction at crystal interfaces, and more. Richly illustrated and accessibly written, Photonic Crystals is an indispensable resource for students and researchers. Extensively revised and expanded Features improved graphics throughout Includes new chapters on photonic-crystal fibers and combined index-and band-gap-guiding Provides an introduction to coupled-mode theory as a powerful tool for device design Covers many new topics, including omnidirectional reflection, anomalous refraction and diffraction, computational photonics, and much more.**

MILITARY DISPLAYS

TECHNOLOGY AND APPLICATIONS

Society of Photo Optical **This first-of-its-kind tutorial on military displays begins with a discussion of fundamentals and leads to an understanding of how displays used by the U.S. Armed Forces differ from their counterparts in the civil sector. Advanced undergraduate students, graduate students, beginning display industry professionals, or anyone who wants to know about display fundamentals with an eye to military applications and the military market will benefit from the detailed information herein. In a simple building-block approach, fundamental concepts such as the lumen, luminous intensity, and illuminance are reviewed, and the author progresses with a discussion of the many display technologies, such as CRT, AMLCD, and AMOLED, as well as display subcomponents, such as backlights, polarizers, and dimming circuitry, before ending with an exposition of the military market itself. The latter includes an identification of performance parameter values, not only for the broad arena of fixed- and rotary-wing aircraft, but also tracked and wheeled vehicles, dismounted soldiers, and command and control facilities. Military Displays gives the reader insight to the more than 647 line-replaceable units for display used by these categories of platforms in the U.S. military today.**

PHYSICS OF LIGHT AND OPTICS (BLACK & WHITE)

Lulu.com

FIELD GUIDE TO INFRARED OPTICS, MATERIALS, AND RADIOMETRY

[SPIE-International Society for Optical Engineering](#) "Field Guide to Infrared Optics, Materials, and Radiometry covers all aspects of IR optics, including monochromatic and chromatic optical aberrations as well as important concepts such as depth of focus, depth of field, hyperfocal distance, warm shields, aspheric surfaces, and kinoforms. It also provides a comprehensive introduction to the optical, mechanical, and thermal properties of infrared materials as well as the essentials of radiometry and sources necessary for the quantitative understanding of infrared signatures and flux transfer, spectral atmospheric transmittance, and path radiance"--

MODULATION TRANSFER FUNCTION IN OPTICAL AND ELECTRO-OPTICAL SYSTEMS

[SPIE Press](#) This tutorial introduces the theory and applications of MTF, used to specify the image quality achieved by an imaging system. It covers basic linear systems theory and the relationship between impulse response, resolution, MTF, OTF, PTF, and CTF. Practical measurement and testing issues are discussed.

PHOTONIC CRYSTALS

THE ROAD FROM THEORY TO PRACTICE

[Springer Science & Business Media](#) Photonic Crystals: The Road from Theory to Practice explores the theoretical road leading to the practical application of photonic band gaps. These new optimal devices are based on symmetry and resonance and the benefits and limitations of hybrid "two dimensional" slab systems in three dimensions. The book also explains that they also signify a return to the ideal of an omnidirectional band gap in a structure inspired by and emulating the simplicity of two dimensions. Finally, the book takes a look at computational methods to solve the mathematical problems that underlie all undertakings in this field. Photonic Crystals: The Road from Theory to Practice should rapidly bring the optical professional and engineer up to speed on this intersection of electromagnetism and solid-state physics. It will also provide an excellent addition to any graduate course in optics.

THREE CUPS OF TEA

ONE MAN'S MISSION TO PROMOTE PEACE . . . ONE SCHOOL AT A TIME

[Penguin](#) The astonishing, uplifting story of a real-life Indiana Jones and his humanitarian campaign to use education to combat terrorism in the Taliban's backyard Anyone who despairs of the individual's power to change lives has to read the story of Greg Mortenson, a homeless mountaineer who, following a 1993 climb of Pakistan's treacherous K2, was inspired by a chance encounter with impoverished mountain villagers and promised to build them a school. Over the next decade he built fifty-five schools—especially for girls—that offer a balanced education in one of the most isolated and dangerous regions on earth. As it chronicles Mortenson's quest, which has brought him into conflict with both enraged Islamists and uncomprehending Americans, Three Cups of Tea combines adventure with a celebration of the humanitarian spirit.

CYBER-PHYSICAL SECURITY

PROTECTING CRITICAL INFRASTRUCTURE AT THE STATE AND LOCAL LEVEL

[Springer](#) This book focuses on the vulnerabilities of state and local services to cyber-threats and suggests possible protective action that might be taken against such threats. Cyber-threats to U.S. critical infrastructure are of growing concern to policymakers, managers and consumers. Information and communications technology (ICT) is ubiquitous and many ICT devices and other components are interdependent; therefore, disruption of one component may have a negative, cascading effect on others. Cyber-attacks might include denial of service, theft or manipulation of data. Damage to critical infrastructure through a cyber-based attack could have a significant impact on the national security, the economy, and the livelihood and safety of many individual citizens. Traditionally cyber security has generally been viewed as being focused on higher level threats such as those against the internet or the Federal government. Little attention has been paid to cyber-security at the state and local level. However, these governmental units play a critical role in providing services to local residents and consequently are highly vulnerable to cyber-threats. The failure of these services, such as waste water collection and water supply, transportation, public safety, utility services, and communication services, would pose a great threat to the public. Featuring contributions from leading experts in the field, this volume is intended for state and local government officials and managers, state and Federal officials, academics, and public policy specialists.

TISSUE OPTICS

LIGHT SCATTERING METHODS AND INSTRUMENTS FOR MEDICAL DIAGNOSIS

This third edition of the biomedical optics classic Tissue Optics covers the continued intensive growth in tissue optics—in particular, the field of tissue diagnostics and imaging—that has occurred since 2007. As in the first two editions, Part I describes fundamentals and basic research, and Part II presents instrumentation and medical applications. However, for the reader's convenience, this third edition has been reorganized into 14 chapters instead of 9. The chapters covering optical coherence tomography, digital holography and interferometry, controlling optical properties of tissues, nonlinear spectroscopy, and imaging have all been substantially updated. The book is intended for researchers, teachers, and graduate and undergraduate students specializing in the physics of living systems, biomedical optics and biophotonics, laser biophysics, and applications of lasers in biomedicine. It can also be used as a textbook for courses in medical physics, medical engineering, and medical biology.

AN INTRODUCTION TO NEURAL NETWORKS

[CRC Press](#) Though mathematical ideas underpin the study of neural networks, the author presents the fundamentals without the full mathematical apparatus. All aspects of the field are tackled, including artificial neurons as models of their real counterparts; the geometry of network action in pattern space; gradient descent methods, including back-propagation; associative memory and Hopfield nets; and self-organization and feature maps. The traditionally difficult topic of adaptive resonance theory is clarified within a hierarchical description of its operation. The book also includes several real-world examples to provide a concrete focus. This should enhance its appeal to those involved in the design, construction and management of networks in commercial environments and who wish to improve their understanding of network simulator packages. As a comprehensive and highly accessible introduction to one of the most important topics in cognitive and computer science, this volume should interest a wide range of readers, both students and professionals, in cognitive science, psychology, computer science and electrical engineering.

OPTICAL AND EUV LITHOGRAPHY

A MODELING PERSPECTIVE

RESOLUTION ENHANCEMENT TECHNIQUES IN OPTICAL LITHOGRAPHY

[SPIE Press](#) Ever-smaller IC devices are pushing the optical lithography envelope, increasing the importance of resolution enhancement techniques. This tutorial encompasses two decades of research. It discusses theoretical and practical aspects of commonly used techniques, including optical imaging and resolution, modified illumination, optical proximity correction, alternating and attenuating phase-shifting masks, selecting RETs, and second-generation RETs. Useful for students and practicing lithographers.

DYNAMICAL SYSTEMS ON NETWORKS

A TUTORIAL

[Springer](#) This volume is a tutorial for the study of dynamical systems on networks. It discusses both methodology and models, including spreading models for social and biological contagions. The authors focus especially on “simple” situations that are analytically tractable, because they are insightful and provide useful springboards for the study of more complicated scenarios. This tutorial, which also includes key pointers to the literature, should be helpful for junior and senior undergraduate students, graduate students, and researchers from mathematics, physics, and engineering who seek to study dynamical systems on networks but who may not have prior experience with graph theory or networks. Mason A. Porter is Professor of Nonlinear and Complex Systems at the Oxford Centre for Industrial and Applied Mathematics, Mathematical Institute, University of Oxford, UK. He is also a member of the CABDyN Complexity Centre and a Tutorial Fellow of Somerville College. James P. Gleeson is Professor of Industrial and Applied Mathematics, and co-Director of MACSI, at the University of Limerick, Ireland.

THREE-DIMENSIONAL PRINTING OF OPTICS

NO LOGO

TAKING AIM AT THE BRAND BULLIES

[Macmillan](#) An analysis of the invasion of our personal lives by logo-promoting, powerful corporations combines muckraking journalism with contemporary memoir to discuss current consumer culture

LOW-LEVEL LIGHT THERAPY

PHOTOBIOMODULATION

[SPIE-International Society for Optical Engineering](#) "Low-level laser therapy (or photobiomodulation therapy) is a rapidly growing approach to treating a wide range of diseases and disorders that afflict humanity. This Tutorial Text covers the basic molecular and cellular mechanisms of action, applications for treating diseases in animal models, and its use in clinical trials and therapeutic practice in patients. Other topics include the two basic chromophores and how they trigger the signaling pathways, activation of transcription factors, and mobilization of stem cells; how the light-source design and the relevant energy parameters can affect the outcome of therapy; and the physics and tissue-optics principles that concern LLLT"--

THE ART OF DECEPTION

CONTROLLING THE HUMAN ELEMENT OF SECURITY

[John Wiley & Sons](#) The world's most infamous hacker offers an insider's view of the low-tech threats to high-tech security Kevin Mitnick's exploits as a cyber-desperado and fugitive form one of the most exhaustive FBI manhunts in history and have spawned dozens of articles, books, films, and documentaries. Since his release from federal prison, in 1998, Mitnick has turned his life around and established himself as one of the most sought-after computer security experts worldwide. Now, in *The Art of Deception*, the world's most notorious hacker gives new meaning to the old adage, "It takes a thief to catch a thief." Focusing on the human factors involved with information security, Mitnick explains why all the firewalls and encryption protocols in the world will never be enough to stop a savvy grifter intent on rifling a corporate database or an irate employee determined to crash a system. With the help of many fascinating true stories of successful attacks on business and government, he illustrates just how susceptible even the most locked-down information systems are to a slick con artist impersonating an IRS agent. Narrating from the points of view of both the attacker and the victims, he explains why each attack was so successful and how it could have been prevented in an engaging and highly readable style reminiscent of a true-crime novel. And, perhaps most importantly, Mitnick offers advice for preventing these types of social engineering hacks through security protocols, training programs, and manuals that address the human element of security.

THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES

[W. W. Norton & Company](#) A pair of technology experts describe how humans will have to keep pace with machines in order to become prosperous in the future and identify strategies and policies for business and individuals to use to combine digital processing power with human ingenuity.

MACHINE LEARNING WITH R

[Packt Publishing Ltd](#) Written as a tutorial to explore and understand the power of R for machine learning. This practical guide that covers all of the need to know topics in a very systematic way. For each machine learning approach, each step in the process is detailed, from preparing the data for analysis to evaluating the results. These steps will build the knowledge you need to apply them to your own data science tasks. Intended for those who want to learn how to use R's machine learning capabilities and gain insight from your data. Perhaps you already know a bit about machine learning, but have never used R; or perhaps you know a little R but are new to machine learning. In either case, this book will get you up and running quickly. It would be helpful to have a bit of familiarity with basic programming concepts, but no prior experience is required.
