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KEY=THUMB - GAEL STEWART

Photonics Rules of Thumb Optics, Electro-Optics, Fiber Optics and Lasers McGraw Hill Professional QUICKLY AND EASILY ESTIMATE THE IMPACT OF CHANGE WITH 300 PROVEN PHOTONICS CALCULATIONS! UPDATED WITH 100 COMPLETELY NEW AND IMPROVED RULES AND ORGANIZED INTO 18 CHAPTERS THAT INCLUDE LASERS, DETECTORS, OPTICS OF THE ATMOSPHERE, AND MANY MORE! Here is a handy compilation of 300 cost-saving, think-on-your-feet photonics rules of thumb designed to save you hours of design time and a world of frustration. Within seconds you can accurately gauge the impact of a suggested design change on your project. It is the premiere collection of these valuable rules in a single, quick look-up reference. These simple-to-implement calculations allow you to rapidly pinpoint trouble spots, ask the right questions at meetings, and are perfect for quick sanity checks of last-minute specifications or performance feature additions. Offering a convenient alphabetical arrangement according to specialty, this unique reference spans the entire spectrum of photonics, including: * Eighteen chapters covering optics, electro-optics, optics of the atmosphere, radiometry, technologies related to security and surveillance systems, lasers, and many others. * If you want to develop a sense of what will work and what won't and want the calculations to keep things real, Photonics Rules of Thumb belongs on your desk or in your pocket. **Photonics Rules of Thumb Optics, Electro-optics, Fiber Optics, and Lasers** "This reference book is a handy compilation of 300 cost-saving, think-on-your-feet photonics rules of thumb designed to save hours of design time. Within seconds you can accurately gauge the impact of a suggested design change on your project. It is the premiere collection of these valuable rules in a single, quick look-up reference. 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Eighteen chapters cover optics, electro-optics, optics of the atmosphere, radiometry, technologies related to security and surveillance systems, lasers, and many others"-- **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 **Photonics Rules of Thumb : Optics, Electro-Optics, Fiber Optics and Lasers Optics, Electro-Optics, Fiber Optics and Lasers McGraw Hill Professional** A handy compilation of 200 proven, time-and-cost-saving rules of thumb that cover the full range of photonics, from optics to lasers. * New edition features 75 completely new rules of thumb and many updated ones * New areas covered include lasers, detectors, and optical communications **Applied Electro Optics Pearson Education A** "back-to-basics" guide to opto-electronic circuit design and construction. To successfully build and optimize opto-electronic circuits, you need to understand both the fundamentals of optics and electronics. Applied Electro-Optics provides engineers, designers and technicians with a firm background in both optical physics and circuit design. In Part I, the book introduces the basic theory of opto-electronics, including: Maxwell's equations and the wave nature of light Reflection and refraction, with extensive coverage of Snell's Law Interference phenomena and the Fabry-Perot interferometer Diffraction effects and diffraction gratings Polarization and electro-optic modulation Photons, basic quantum theory, and spectroscopic techniques Then, in Part II, the book introduces each major element of an electro-optic system. Understand semiconductor light sources such as LEDs and diode lasers. Consider optical transmitters and discover how to minimize the impact of electromagnetic interference through careful circuit location, grounding, and shielding. Review the basic structure and operation of photodiodes, phototransistors, optocouplers, and photoconductors. Then, learn practical techniques for managing the trade-offs required to integrate these devices into useful circuits. A full chapter on optical receivers demonstrates how to integrate photodetectors into useful receiver circuits; both amplifier and hybrid circuits are covered. Finally, walk step-by-step through building and optimizing circuits for a variety of applications, including CD players and infrared data transmission. If your goal is to build the best possible opto-electronic circuits or just to understand how they operate, Applied Electro-Optics delivers just the right balance of theory and practice to help you. **Fiber Optics Standard Dictionary Springer Science & Business Media** Fiber Optics Vocabulary Development In 1979, the National Communications System published Technical Information Bulletin TB 79-1, Vocabulary for Fiber Optics and Lightwave Communications, written by this author. Based on a draft prepared by this author, the National Communications System published Federal Standard FED-STD-1037, Glossary of Telecommunications Terms, in 1980 with no fiber optics terms. In 1981, the first edition of this dictionary was published under the title Fiber Optics and Lightwave Communications Standard Dictionary. In 1982, the then National Bureau of Standards, now the National Institute of Standards and Technology, published NBS Handbook 140, Optical Waveguide Communications Glossary, which was also published by the General Services Administration as PB82-166257 under the same title. Also in 1982, Dynamic Systems, Inc., Fiber Optic Sensor Technology Handbook, co-authored and edited by published the this author, with an extensive Fiber Optic Sensors Glossary. In 1989, the handbook was republished by Optical Technologies, Inc. It contained the same glossary. In 1984, the Institute of Electrical and Electronic Engineers published IEEE Standard 812-1984, Definitions of Terms Relating to Fiber Optics. In 1986, with the assistance of this author, the National Communications System published FED-STD-1037A, Glossary of Telecommunications Terms, with a few fiber optics terms. In 1988, the Electronics Industries Association issued EIA-440A, Fiber Optic Terminology, based primarily on PB82-166257. The International Electrotechnical Commission then published IEC 731, Optical Communications, Terms and Definitions. In 1989, the second edition of this dictionary was published. **Optics and Lasers Including Fibers and Optical Waveguides Springer Science & Business Media** Optics and Lasers is an introduction to applied optics, covering elementary ray and wave optics as well as lasers, holography, fibers, optical waveguides, integrated optics, and quantum noise. Further chapters deal with the physical principles of optical instruments, light sources, and detectors. Numerous examples and exercises with complete solutions help the readers to deepen their knowledge. This completely revised and enlarged edition is intended for advanced undergraduates in laser physics and engineering but will also be helpful for active scientists. **Fourier Optics in Image Processing CRC Press** This much-needed text brings the treatment of optical pattern recognition up-to-date in one comprehensive resource. Optical pattern recognition, one of the first implementations of Fourier Optics, is now widely used, and this text provides an accessible introduction for readers who wish to get to grips with how holography is applied in a practical context. A wide range of devices are addressed from a user perspective and are accompanied with detailed tables enabling performance comparison, in addition to chapters exploring computer-generated holograms, optical correlator systems, and pattern matching algorithms. This book will appeal to both lecturers and research scientists in the field of electro-optic devices and systems. **Reliability in Scientific Research Improving the Dependability of Measurements, Calculations, Equipment, and Software Cambridge University Press** Covering many techniques widely used in research, this book will help researchers in the physical sciences and engineering solve troublesome - and potentially very time consuming - problems in their work. The book deals with technical difficulties that often arise unexpectedly during the use of various common experimental methods, as well as with human error. It provides preventive measures and solutions for such problems, thereby saving valuable time for researchers. Some of the topics covered are: sudden leaks in vacuum systems, electromagnetic interference in electronic instruments, vibrations in sensitive equipment, and bugs in computer software. The book also discusses mistakes in mathematical calculations, and pitfalls in designing and carrying out experiments. Each chapter contains a summary of its key points, to give a quick overview of important potential problems and their solutions in a given area. **Building Electro-Optical Systems Making It all Work John Wiley & Sons** Praise for the First Edition "Now a new laboratory bible for optics researchers has joined the list: it is Phil Hobbs's Building Electro-Optical Systems: Making It All Work." —Tony Siegman, Optics & Photonics News Building a modern electro-optical instrument may be the most interdisciplinary job in all of engineering. Be it a DVD player or a laboratory one-off, it involves physics, electrical engineering, optical engineering, and computer science interacting in complex ways. This book will help all kinds of technical people sort through the complexity and build electro-optical systems that just work, with maximum insight and minimum trial and error. Written in an engaging and conversational style, this Second Edition has been updated and expanded over the previous edition to reflect technical advances and a great many conversations with working designers. Key features of this new edition include: Expanded coverage of detectors, lasers, photon budgets, signal processing scheme planning, and front ends Coverage of everything from basic theory and measurement principles to design debugging and integration of optical and electronic systems Supplementary material is available on an ftp site, including an additional chapter on thermal control and Chapter problems highly relevant to real-world design Extensive coverage of high performance optical detection and laser noise cancellation Each chapter is full of useful lore from the author's years of experience building advanced instruments. For more background, an appendix lists 100 good books in all relevant areas, introductory as well as advanced. Building Electro-Optical Systems: Making It All Work, Second Edition is essential reading for researchers, students, and professionals who have systems to build. **Introduction to Optical Microscopy Cambridge University Press** This fully updated, self-contained textbook covering modern optical microscopy equips students with a solid understanding of the theory underlying a range of advanced techniques. Two new chapters cover pump-probe techniques, and imaging in scattering media, and additional material throughout covers light-sheet microscopy, image scanning microscopy, and much more. An array of practical techniques are discussed, from classical phase contrast and confocal microscopy, to holographic, structured illumination, multi-photon, and coherent Raman microscopy, and optical coherence tomography. Fundamental topics are also covered, including Fourier optics, partial coherence, 3D imaging theory, statistical optics, and the physics of scattering and fluorescence. With a wealth of end-of-chapter problems, and a solutions manual for instructors available online, this is an invaluable book for electrical engineering, biomedical engineering, and physics students taking graduate courses on optical microscopy, as well as advanced undergraduates, professionals, and researchers looking for an accessible introduction to the field. **Mobile Intelligent Autonomous Systems CRC Press** Going beyond the traditional field of robotics to include other mobile vehicles, Mobile Intelligent Autonomous Systems describes important theoretical concepts, techniques, approaches, and applications that can be used to build truly mobile intelligent autonomous

systems (MIAS). It offers a comprehensive treatment of robotics and MIAS, as well as r

Physics of Optoelectronics CRC Press Physics of Optoelectronics focuses on the properties of optical fields and their interaction with matter. Understanding that lasers, LEDs, and photodetectors clearly exemplify this interaction, the author begins with an introduction to lasers, LEDs, and the rate equations, then describes the emission and detection processes. The book summarizes and reviews the mathematical background of the quantum theory embodied in the Hilbert space. These concepts highlight the abstract form of the linear algebra for vectors and operators, supplying the "pictures" that make the subject more intuitive. A chapter on dynamics includes a brief review of the formalism for discrete sets of particles and continuous media. It also covers the quantum theory necessary for the study of optical fields, transitions, and semiconductor gain. This volume supplements the description of lasers and LEDs by examining the fundamental nature of the light that these devices produce. It includes an analysis of quantized electromagnetic fields and illustrates inherent quantum noise in terms of Poisson and sub-Poisson statistics. It explains matter-light interaction in terms of time-dependent perturbation theory and Fermi's golden rule, and concludes with a detailed discussion of semiconductor emitters and detectors.

Optical Communications Rules of Thumb McGraw Hill Professional We are taking the unique "rules of thumb" format that drove the authors' previous Photonics Rules of Thumb, and creating a new volume for the Optical telecommunications field. Rules of thumb are short-cuts, tricks, and methods that industry vets have developed through long years of trial and error. These books share such rules with less experienced readers, who find such information incredibly valuable.

Building Electro-Optical Systems Making It All Work John Wiley & Sons Building Electro-Optical Systems In the newly revised third edition of Building Electro-Optical Systems: Making It All Work, renowned Dr. Philip C. D. Hobbs delivers a birds-eye view of all the topics you'll need to understand for successful optical instrument design and construction. The author draws on his own work as an applied physicist and consultant with over a decade of experience in designing and constructing electro-optical systems from beginning to end. The book's topics are chosen to allow readers in a variety of disciplines and fields to quickly and confidently decide whether a given device or technique is appropriate for their needs. Using accessible prose and intuitive organization, Building Electro-Optical Systems remains one of the most practical and solution-oriented resources available to graduate students and professionals. The newest edition includes comprehensive revisions that reflect progress in the field of electro-optical instrument design and construction since the second edition was published. It also offers approximately 350 illustrations for visually oriented learners. Readers will also enjoy: A thorough introduction to basic optical calculations, including wave propagation, detection, coherent detection, and interferometers Practical discussions of sources and illuminators, including radiometry, continuum sources, incoherent line sources, lasers, laser noise, and diode laser coherence control Explorations of optical detection, including photodetection in semiconductors and signal-to-noise ratios Full treatments of lenses, prisms, and mirrors, as well as coatings, filters, and surface finishes, and polarization Perfect for graduate students in physics, electrical engineering, optics, and optical engineering, Building Electro-Optical Systems is also an ideal resource for professional designers working in optics, electro-optics, analog electronics, and photonics.

The New Walford Guide to Reference Resources Library Assn Pub Limited Part of a three-volume cycle, this book presents a selection of key resources - accessible via the web and in print. Resources within the 12 groupings are divided between 100 generally recognizable subject fields, and then allocated to one of 13 standard resource categories. It is intended for LIS professionals, research workers and students.

Optics, Light and Lasers The Practical Approach to Modern Aspects of Photonics and Laser Physics John Wiley & Sons This new, updated and enlarged edition of the successful and exceptionally well-structured textbook features new chapters on such hot topics as optical angular momentum, microscopy beyond the resolution limit, metamaterials, femtocombs, and quantum cascade lasers. It provides comprehensive and coherent coverage of fundamental optics, laser physics, and important modern applications, while equally including some traditional aspects for the first time, such as the Collins integral or solid immersion lenses. Written for newcomers to the topic who will benefit from the author's ability to explain difficult theories and effects in a straightforward and readily comprehensible way.

Electromagnetic Waves and Lasers Morgan & Claypool Publishers This book reviews basic electromagnetic (EM) wave theory and applies it specifically to lasers in order to give the reader not only tangible examples of how the theory is manifested in real life, but also practical knowledge about lasers, and their operation and usage. The latter can be useful for those involved with using lasers. As a short treatise on this subject matter, this book is not intended to dwell deeply into the details of EM waves nor lasers. A bibliography is provided for those who wish to explore in more depth the topics covered in this book. Rather the aim of this book is to offer a quick overview, which will allow the reader to gain a competent general understanding of EM waves and lasers.

Fundamentals of Photonics Wiley-Interscience Fundamentals of Photonics: A complete, thoroughly updated, full-color second edition Now in a new full-color edition, Fundamentals of Photonics, Second Edition is a self-contained and up-to-date introductory-level textbook that thoroughly surveys this rapidly expanding area of engineering and applied physics. Featuring a logical blend of theory and applications, coverage includes detailed accounts of the primary theories of light, including ray optics, wave optics, electromagnetic optics, and photon optics, as well as the interaction of photons and atoms, and semiconductor optics. Presented at increasing levels of complexity, preliminary sections build toward more advanced topics, such as Fourier optics and holography, guided-wave and fiber optics, semiconductor sources and detectors, electro-optic and acousto-optic devices, nonlinear optical devices, optical interconnects and switches, and optical fiber communications. Each of the twenty-two chapters of the first edition has been thoroughly updated. The Second Edition also features entirely new chapters on photonic-crystal optics (including multilayer and periodic media, waveguides, holey fibers, and resonators) and ultrafast optics (including femtosecond optical pulses, ultrafast nonlinear optics, and optical solitons). The chapters on optical interconnects and switches and optical fiber communications have been completely rewritten to accommodate current technology. Each chapter contains summaries, highlighted equations, exercises, problems, and selected reading lists. Examples of real systems are included to emphasize the concepts governing applications of current interest.

Photoresponsive Polymers I Springer Science & Business Media With contributions by numerous experts

Optics and Spectroscopy Optical Communications Essentials McGraw Hill Professional Keiser has developed this readable tour through the basics and cutting edge applications of optical communications for non-specialist engineers and lower tech readers. Broken into short, 20-25 page modules, complete with illustrations and sidebars, this is a completely new approach to the topic, ideal for use in the classroom, independent study, or corporate training.

Physics of Light and Optics (Black & White) Lulu.com American Book Publishing Record

Fundamentals of Optomechanics CRC Press This textbook will provide the fundamentals of optomechanics. Starting from the basics, this textbook will lead you through the opto-mechanical design process, discussing materials selection, principles of kinematic design, as well as mounting of windows, individual lenses, and multiple lenses. Techniques for mounting prisms, mirror performance, and design and mounting of mirrors will be included. Written by the two top scientists in the field, this stand-alone, student-friendly textbook has been course-tested and will include homework problems as well as a solutions manual for adopting professors.

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.

Basics of Photonics and Optics Trafford Publishing The book is inexpensive and algebra-based, suitable for post-secondary technical/vocational education. It deals with the physical concepts at the basic mathematical level for the technician student to succeed.

Electro-Optics Handbook McGraw Hill Professional All-inclusive opto electronics guide A valuable "must-have" tool for electronic and optical engineers, this Handbook is the only single-volume, tell-it-all guide to the use of optical devices and light in electronics systems. Developed by a towering figure in the field, this manual familiarizes you with UV, VUV and X-Ray lasers; visible, solid-state, semiconductor and infrared gas lasers; FEL and ultrashort laser pulses; visible and infrared optical materials; infrared and imaging detectors; optical fibers and fiber optic sensors; holography; laser spectroscopy and photochemistry; high resolution lithography for optoelectronics; and much more. In this up-to-the-minute edition you'll find new chapters on optical communications, electro-optic devices, and high intensity optical fields, in addition to extensively updated material throughout, and abundant charts, diagrams and data tables.

Algorithms for Multispectral and Hyperspectral Imagery Oral Laser Application Quintessence Publishing Company Offers a comprehensive account of all conventional indications for laser-assisted dentistry, including cavity preparation, endodontics, and periodontal therapy, as well as recent advancements such as laser-assisted bleaching, soft laser applications, and the treatment of hypersensitive cervical areas. For each indication, detailed instructions on the use of the laser are provided in both text and illustrations to allow even novices to make successful, responsible, and immediate use of this innovative technology. In addition, each chapter presents its topic in the context of the underlying scientific concepts and a thorough and up-to-date review of the extant literature. The book also features in-depth discussion of all available wavelengths and their specific applications to guide readers in the purchase of a new laser system as well as extensive case reports to demonstrate achievable therapeutic outcomes and allow readers to compare their results with those of other users. Oral Laser Application is an invaluable guide for all clinicians currently using or wishing to integrate laser-assisted dentistry in their practice.

Laser Radar Progress and Opportunities in Active Electro-Optical Sensing National Academies Press In today's world, the range of technologies with the potential to threaten the security of U.S. military forces is extremely broad. These include developments in explosive materials, sensors, control systems, robotics, satellite systems, and computing power, to name just a few. Such technologies have not only enhanced the capabilities of U.S. military forces, but also offer enhanced offensive capabilities to potential adversaries - either directly through the development of more sophisticated weapons, or more indirectly through opportunities for interrupting the function of defensive U.S. military systems. Passive and active electro-optical (EO) sensing technologies are prime examples. Laser Radar considers the potential of active EO technologies to create surprise; i.e., systems that use a source of visible or infrared light to interrogate a target in combination with sensitive detectors and processors to analyze the returned light. The addition of an interrogating light source to the system adds rich new phenomenologies that enable new capabilities to be explored. This report evaluates the fundamental, physical limits to active EO sensor technologies with potential military utility; identifies key technologies that may help overcome the impediments within a 5-10 year timeframe; considers the pros and cons of implementing each existing or emerging technology; and evaluates the potential uses of active EO sensing technologies, including 3D mapping and multi-discriminate laser radar technologies.

Head-mounted Displays Designing for the User McGraw-Hill Professional Publishing Gain a solid understanding of the optical, imaging, anthropometric, and safety features of head-mounted displays. Expert contributors show you how to link user performance to critical system parameters. . . fit HMD devices to a diverse range of head shapes and sizes. . . assess the limits of head-supported weight and size. . . present high-quality imagery. . . prevent eye strain and fatigue with well-aligned imagery. . . use the correct model for presenting stereoscopic imagery. . . and more. HMD visual displays, image alignment, head and neck strain and brain-actuated control are explored in depth.

Sci-tech News Practical Optical System Layout: And Use of Stock Lenses McGraw Hill Professional Drawn from the author's extensive seminar experience; this book discusses characteristics of a range of optical components; how to determine components to be used; and how to arrange components so that the system measures up to performance objectives. --

Scratching the Surface - An Introduction to Photonics - Part 1 Optics, Thin Films, Lasers and Crystals Lulu.com A beginner's introduction to Optics, Thin Films, Lasers and Crystals. Parts 1-3 cover: absorption, angle of incidence, antireflection, bandgap, birefringence, Bravais, lattice, damage, dielectric, crystallography, grating, diode, electric field, diffraction, oscillator, electro-optic, emission, energy gap, poling, fiber optic, fluorescence, frequency, geometrical optics, glide plane, graded-index, grinding, group velocity, harmonic generation, index, interference, filters, cavity, diodes, pumping, laser, light, melting glass, Miller indices, mode-locking, molding, nonlinear, semiconductor, nucleation, optical cavity, coatings, resonator, phase shift, phase velocity, phonon, photon, p-n junction, point group, polishing, population inversion, Q-switched, saturable absorber, screw axis, semiconductor, solid state, space group, substrate, sum-frequency, tuning, temperature-bandwidth, thin films, transmission, unit cell, unstable resonator, walkoff, wave vector, waveguide, wavelength...and much more. Enjoy

Optical Engineering Publishes papers reporting on research and

development in optical science and engineering and the practical applications of known optical science, engineering, and technology. **Practical Applications of Microresonators in Optics and Photonics CRC Press** Assembling an international team of experts, this book reports on the progress in the rapidly growing field of monolithic micro- and nanoresonators. The book opens with a chapter on photonic crystal-based resonators (nanocavities). It goes on to describe resonators in which the closed trajectories of light are supported by any variety of total internal reflection in curved and polygonal transparent dielectric structures. The book also covers distributed feedback microresonators for slow light, controllable dispersion, and enhanced nonlinearity. A portion of coverage is dedicated to the unique properties of resonators, which are extremely efficient tools when conducting multiple applications. **Cumulative Book Index** A world list of books in the English language. **Grundlagen der Photonik John Wiley & Sons** Schon die erste Auflage des englischen Lehrbuchs 'Fundamentals of Photonics' zeichnete sich durch seine ausgewogene Mischung von Theorie und Praxis aus, und deckte in detaillierter Darstellung die grundlegenden Theorien des Lichts ab. Es umfasste sowohl die Themen Strahlenoptik, Wellenoptik, elektromagnetische Optik, Photonenoptik, sowie die Wechselwirkung von Licht und Materie, als auch die Theorie der optischen Eigenschaften von Halbleitern. Die Photonik-Technologie hat eine rasante Entwicklung genommen seit der Publikation der ersten Ausgabe von 'Fundamentals of Photonics' vor 15 Jahren. Die nun vorliegende Zweite Auflage des Marksteins auf dem Gebiet der Photonik trägt mit zwei neuen und zusätzlichen Kapiteln den neuesten technologischen Fortschritten Rechnung: Photonische Kristalle sowie Ultrakurzpuls-Optik. Zudem wurden alle Kapitel gründlich überarbeitet und viele Abschnitte hinzugefügt, so z.B. über Laguerre-Gauss Strahlen, die Sellmeier-Gleichung, Photonenkristall-Wellenleiter, photonische Kristallfasern, Mikrosphären-Resonatoren, Optische Kohärenz Tomographie, Bahndrehimpuls des Photons, Bohrsche Theorie, Raman-Verstärker, rauscharme Avalanche-Photodioden, Abstimmkurven und Dispersions-Management.