

## Jeff Hecht Understanding Fiber Optics Solutions Manual

This book is an up-to-date treatment of optical fiber fusion splicing incorporating all the recent innovations in the field. It provides a toolbox of general strategies and specific techniques that the reader can apply when optimizing fusion splices between novel fibers. It specifically addresses considerations important for fusion splicing of contemporary specialty fibers including dispersion compensating fiber, erbium-doped gain fiber, polarization maintaining fiber, and microstructured fiber. Finally, it discusses the future of optical fiber fusion splicing including silica and non-silica based optical fibers as well as the trend toward increasing automation. Whilst serving as a self-contained reference work, abundant citations from the technical literature will enable readers to readily locate primary sources.

The only introductory text on the market today that explains the underlying physics and engineering applicable to all lasers Although lasers are becoming increasingly important in our high-tech environment, many of the technicians and engineers who install, operate, and maintain them have had little, if any, formal training in the field of electro-optics. This can result in less efficient usage of these important tools.

Introduction to Laser Technology, Fourth Edition provides readers with a good understanding of what a laser is and what it can and cannot do. The book explains what types of laser to use for different purposes and how a laser can be modified to improve its performance in a given application. With a unique combination of clarity and technical depth, the book explains the characteristics and important applications of commercial lasers worldwide and discusses light and optics, the fundamental elements of lasers, and laser modification. In addition to new chapter-end problems, the Fourth Edition includes new and expanded chapter material on: Material and wavelength Diode Laser Arrays Quantum-cascade lasers Fiber lasers Thin-disk and slab lasers Ultrafast fiber lasers Raman lasers Quasi-phase matching Optically pumped semiconductor lasers Introduction to Laser Technology, Fourth Edition is an excellent book for students, technicians, engineers, and other professionals seeking a fuller, more formal introduction to the field of laser technology.

This Book Is Thorough, Up To Date, And Provides Comprehensive And Intuitive Introduction To Fiber Optics. With Mathematics Limited To Basic Algebra, The Book Takes A Practical Approach To Understanding Fiber Optics. It Thoroughly Describes Important Concepts For The Novice, Building Up An Understanding Of Optical Fibers, Their Properties, Light Sources And Detectors, And Fiber-Optic Components And Their Application In Fiber-Optic Systems. It Covers The Basics Of Fiber-Optic Measurement And Troubleshooting. Ideal For Technicians, Entry-Level Engineers, And Other Nonspecialists.

The expanded fourth edition of the book that offers an essential introduction to laser technology and the newest developments in the field The revised and updated fourth edition of Understanding Lasers offers an essential guide and introduction that explores how lasers work, what they do, and how they are applied in the real world. The author—a Fellow of The Optical Society—reviews the key concepts of physics and optics that are essential for understanding lasers and explains how lasers operate. The book also contains information on the optical accessories used with lasers. Written in non-technical terms, the book gives an overview of the wide-variety laser types and configurations. Understanding Lasers covers fiber, solid-state, excimer, helium-neon, carbon dioxide, free-electron lasers, and more. In addition, the book also explains concepts such as the difference between laser oscillation and amplification, the importance of laser gain, and tunable lasers. The updated fourth edition highlights the most recent research and development in the field. This important resource: Includes a new chapter on fiber lasers and amplifiers Reviews new topics on physics of optical fibers and fiber lasers, disk lasers, and Ytterbium lasers Contains new sections on Laser Geometry and Implications, Diode Laser Structures, Optimal Parametric Sources, and 3D Printing and Additive Manufacturing Puts the focus on research and emerging developments in areas such as spectroscopy, slow light, laser cooling, and extremely precise measurements Contains appendices, glossary, and index that help make this book a useful reference Written for engineering and physics students, engineers, scientists, and technicians, the fourth edition of Understanding Lasers contains the basic concepts of lasers and the most recent advances in the technology.

Optical Networking Best Practices Handbook  
Lasers and Electro-optics

Molding the Flow of Light - Second Edition  
Fiber Optic Installer's Field Manual

Introduction to Fiber Optics  
The Laser Inventor

A complete explanation of today's communication technologies, and their impact!

Prologue: May 16, 1960, Malibu, California. 1. The Laser Race. 2. Microwaves Are the First Step. 3. Leaping a Few Orders of Magnitude: The Optical Maser. 4. The Outsider's Invention: The Laser. 5. Bell Labs Takes the Early Lead. 6. Stimulating the Emission of Money. 7. A Spreading Interest in the Laser Idea. 8. A Pause to Compare Notes. 9. A Dark Horse Joins the Race. 10. "Everybody knew it was going to happen within months"--Bell Labs Feels Safely in the Lead. 11. A Crash Program at "Pipsqueak Inc.". 12. The Siren Call of the Laser. 13. The Critical Question of Efficiency.

For courses in Introduction to Fiber Optics and Introduction to Optical Networking in departments of Electronics Technology and Electronics Engineering Technology. Also suitable for corporate training programs. Ideal for technicians, entry-level engineers, and other nonspecialists, this best-selling practical, thorough, and accessible introduction to fiber optics reflects the expertise of an author who has followed the field for over 25 years. Using a non-theoretical/non-mathematical approach, it explains the principles of optical fibers, describes components and how they work, explores the tools and techniques used to work with them and the devices used to connect fiber network, and concludes with applications showing how fibers are used in modern communication systems. It covers both existing systems and developing technology, so students can understand present systems and new developments.

Annotation First book on Free Space Optics (FSO) in the marketplace. Comprehensive book that covers fundamentals through benefits and deployment pit falls. First comprehensive book about FSO, written by two experts in the field. Explores FSO as an alternative to cable and fiber as last-mile solutions. Enables readers to maximize the benefits of FSO and anticipate potential deployment pitfalls. Free Space Optics begins with the fundamentals of the technology before launching into FSO topologies, deployment issues, applications, and case studies. Bakshesh Ghuman is Vice President of Marketing at LightPointe Communications, Inc. Ghuman has worked in optical and telecommunications for over 12 years, focusing on marketing, product development, and applications engineering. He holds a Master of Science in Telecommunications Management from Golden State University, San Francisco. Dr. Heinz Willebrand is Chief Technology Officer of LightPointe Communications where he leads all of LightPointe's R&D activities in the field of free space wireless RF and high-speed optical laser communication systems. Prior to LightPointe, Dr. Willebrand was a research professor at the University of Boulder, Colorado, where he taught classes on fiber optic and wireless technologies and researched areas such as fiber optics and high-speed computer interconnections.

Applications, Policy, and Impact  
The Undersea Network

Introduction to Laser Technology  
Control and Freedom

Light for a New Age  
Laser Pioneers

The Instructor's Manual is a companion to the fifth edition of Understanding Fiber Optics for both instructors teaching a class and learners studying on their own or in a class. It explains the organization of the book and a strategy for using it to learn about fiber optics. It also answers questions that were asked in the book. In addition to giving the answers for multiple-choice quizzes, it elaborates on "questions to think about" and gives worked-out answers for problems, displaying the calculations so learners can follow the process of getting an answer. This supplements the book's goals of helping readers understand fiber optics and their applications. [Publisher of the Instructor Manual: LaserLight Press, Auburndale, Massachusetts].

Laser: Supertool of the 1980s, describes the many uses of lasers, from outer space to farms, and from operating rooms to checkout counters. Written for the general public, it talks about the wonders of modern laser technology.

Textbook on the physical principles of optical fibers - for advanced undergraduates and graduates in physics or electrical engineering.

Explains the scientific principles behind the workings of the laser, describes the characteristics of a laser beam, and looks at modern applications

Father of Fibre Optics  
Photonic Crystals

Optics  
Fundamentals and Engineering

The Laser Guidebook  
Communications Under the Seas

The technology of undersea communications, from stranded-wire telegraph cables in the 1850s to fiber-optic cables at the end of the twentieth century, and its social, political, and economic impact. By the end of the twentieth century, fiber-optic technology had made possible a worldwide communications system of breathtaking speed and capacity. This amazing network is the latest evolution of communications technologies that began with undersea telegraph cables in the 1850s and continued with coaxial telephone cables a hundred years later. Communications under the Seas traces the development of these technologies and assesses their social, economic, and political effects. If we cannot predict the ultimate consequences of today's wired world—its impact on economic markets, free expression, and war and peace—or the outcome of the conflict between wired and wireless technology, we can examine how similar issues have been dealt with in the past. The expert contributors to this volume do just that, discussing technical developments in undersea cables (and the development of competing radio and satellite communications technology), management of the cables by private and public interests, and the impact on military and political activities. Chapters cover such topics as the daring group of nineteenth-century entrepreneurs who wove a network of copper wires around the world (and then turned conservative with success); the opening of the telegraphic network to general public use; the government- and industry-forced merger of wireless and cable companies in Britain; and the impact of the cable network on diplomacy during the two world wars.

Step-by-step field guide for fiber optic cable installation. Bob Chomycz's put-it-in-your-pocket-and-go Fiber Optic Installer's Field Manual explains fiber optic cable installation via an extremely effective, heavily illustrated, step-by-step approach. This easy-look-up compendium gives you diagrams and procedures you can count on, whether you're installing fiber optic cable indoors or out. It also gives you comprehensive guidelines on testing, troubleshooting, and maintenance. All major optical fiber types are included, along with: Full-scale treatment of Wave Division Multiplexing (WDM) and optical couplers; System integration for offices, industrial plants, and telcos...optical modern and multiplexer systems...Ethernet, FDDI and Sonet; Extensive coverage of SONET; LAN cabling standards; Design fundamentals, including bandwidth calculations and network, logical, and physical topologies; Much, much more.

Optical devices are employed in an ever-increasing range of applications, from simple lenses to complex fiber-optic communication networks. This book provides a detailed introduction to modern optical engineering, covering the fundamental concepts as well as practical techniques and applications. Basic optical principles are presented, particularly reflection, refraction, aberrations, diffraction and interference. Building on this foundation, a wide variety of optical devices and processes are then discussed, including simple optical instruments, photodetectors, spatial light modulators, holography and lasers. Two chapters are devoted to linear system transforms and signal processing, and the book concludes with a chapter on fibre optics. The book contains many worked examples and over 250 problems (solutions manual for instructors available from the publishers). It will be invaluable to electrical engineering and physics undergraduates taking courses in optical engineering, photonics, and electro-optics.

An instruction manual for use with the fifth edition of Understanding Fiber Optics by Jeff Hecht. This book includes an overview for instructors, answers to quizzes and "questions to think about" published in the book, worked-out solutions to selected problems with equations, and additional material to supplement the book. This is the original manual prepared and published in 2006 along with the fifth edition of Understanding Fiber Optics, with only minimal updates.

Hollow Core Optical Fbers  
Understanding Fiber Optics

The Man Who Bent Light  
Understanding Lasers

Broadband Circuits for Optical Fiber Communication  
Study Guide to FOA Certification

Updated January 2019.This book is a complete guide to the design, installation, testing and operation of fiber optic networks. It was written with the assistance of many experienced Fiber Optic Association (FOA) instructors in fiber optics as a reference book for classes aimed at FOA CFOT certification as well as a basic reference for anyone working in the field of fiber optics. This book offers expansive coverage on the components and processes of fiber optics as used in all applications and installation practices. A complete curriculum for teaching fiber optics using this book as a text is available from FOA.

A tutorial introduction to fiber optics, which explains fundamental concepts of fiber optics, components and systems with minimal math. With more than 100,000 copies in print, Understanding Fiber Optics has been widely used in the classroom, for self study, and in corporate training since the first edition was published in 1987. This is a reprint of the 5th edition, originally published by Pearson Education and now available at low cost from Laser Light Press.

In our "wireless" world it is easy to take the importance of the undersea cable systems for granted, but the stakes of their successful operation are huge, as they are responsible for carrying almost all transoceanic Internet traffic. In The Undersea Network Nicole Starosielski follows these cables from the ocean depths to their landing zones on the sandy beaches of the South Pacific, bringing them to the surface of media scholarship and making visible the materiality of the wired network. In doing so, she charts the cable network's cultural, historical, geographic and environmental dimensions. Starosielski argues that the environments the cables occupy are historical and political realms, where the network and the connections it enables are made possible by the deliberate negotiation and manipulation of technology, culture, politics and geography. Accompanying the book is an interactive digital mapping project, where readers can trace cable routes, view photographs and archival materials, and read stories about the island cable hubs.

The father of fiber optics, Narinder Singh Kapany was far more than your typical multi-hyphenate. Inventor, art collector, sculptor, farmer, entrepreneur, teacher, and a successful businessman, Dr Kapany was what Fortune magazine in its 1999 issue called, 'one of the seven unsung heroes of the 20th century'. An insightful and inspirational life story, this memoir chronicles his 90 remarkable years. Charming, idiosyncratic, and highly engaging, The Man who Bent Light serves up enough variety and verve to celebrate the lives of a half-dozen individuals. But there is only one Narinder Singh Kapany, and his life, illuminated in his singular memoir, is a life like no other.

FOA Reference Guide to Fiber Optics  
Lasers, Death Rays, and the Long, Strange Quest for the Ultimate Weapon

The Race to Make the Laser  
Fiber Optic Essentials

Instructor's Manual for Understanding Fiber Optics Fifth Edition  
The Next Arms Race

New edition of a reference and tutorial introduction to the practical aspects of lasers--the functional characteristics vital to those who work with them. A few chapters describe basic principles; subsequent chapters are devoted to the various kinds of lasers, e.g. helium-neon, noble gas, helium-cadmium, carbon dioxide, chemical, copper and gold vapor, excimer, nitrogen, and others. Annotation copyright by Book News, Inc., Portland, OR

Optical Networking Best Practices Handbook presents optical networking in a very comprehensive way for nonengineers needing to understand the fundamentals of fiber, high-capacity, high-speed equipment and networks, and upcoming carrier services. The book provides a practical understanding of fiber optics as a physical medium, sorting out single-mode versus multi-mode and the crucial concept of Dense Wave-Division Multiplexing.

An expert guide to the new and emerging field of broadband circuits for optical fiber communication This exciting publication makes it easy for readers to enter intoand deepen their knowledge of the new and emerging field ofbroadband circuits for optical fiber communication. The author'sselection and organization of material have been developed, tested,and refined from his many industry courses and seminars. Five typesof broadband circuits are discussed in detail: \* Transimpedance amplifiers \* Limiting amplifiers \* Automatic gain control (AGC) amplifiers \* Laser drivers \* Modulator drivers Essential background on optical fiber, photodetectors, lasers,modulators, and receiver theory is presented to help readersunderstand the system environment in which these broadband circuitsoperate. For each circuit type, the main specifications and theirimpact on system performance are explained and illustrated with practical implementations. A broad range ofcircuits in MESFET, HFET, BJT, HBT, BiCMOS, and CMOS technolgis covered. Emphasis is on circuits for digital, continuous-modetransmission in the 2.5 to 40 Gb/s range, typically used in SONET,SDH, and Gigabit Ethernet applications. Burst-mode circuits foroptical networks (PON) and analog circuits for hybridfiber-coax (HFC) cable-TV applications also are discussed. Learning aids are provided throughout the text to help readersgrasp and apply difficult concepts and techniques, including: \* Chapter summaries that highlight the key points \* Problem-and-answer sections to help readers apply their newknowledge \* Research directions that point to exciting new technologicalbreakthroughs on the horizon \* Product examples that show the performance of actual broadbandcircuits \* Appendices that cover eye diagrams, differential circuits, Sparameters, transistors, and technologies \* A bibliography that leads readers to more complete and in-depthtreatment of specialized topics This is a superior learning tool for upper-level undergraduates andgraduate-level students in circuit design and optical fibercommunication. Unlike other texts that concentrate on analogcircuits in general or mostly on optics, this text providesbalanced coverage of electronic, optic, and system issues.Professionals in the fiber optic industry will find it an excellentreference, incorporating the latest technology and discoveries inthe industry.

Fiber optics is the hottest topic in communications and this book from the world's leading experts clearly lays out all the details of optical communications engineering \* Essential technical guide and solutions kit for the super-fast, super-broad fiber systems and devices powering the fastest-growing communications infrastructure \* Methods for generating above peak performance \* Clear explanations and answers to tough challenges for WDM, DWDM, amplifiers, solitons, and other key technologies

Optics Light for a New Age  
Fiber Optics Handbook: Fiber, Devices, and Systems for Optical Communications

Roots of Reagan's 'Star Wars'  
Introduction to Optical Engineering

Optical Fiber Communications  
Beam Weapons

Covering a broad range of topics in modern optical physics and engineering, this textbook is invaluable for undergraduate students studying laser physics, optoelectronics, photonics, applied optics and optical engineering. This new edition has been re-organized, and now covers many new topics such as the optics of stratified media, quantum well lasers and modulators, free electron lasers, diode-pumped solid state and gas lasers, imaging and non-imaging optical systems, squeezed light, periodic poling in nonlinear media, very short pulse lasers and new applications of lasers. The textbook gives a detailed introduction to the basic physics and engineering of lasers, as well as covering the design and operational principles of a wide range of optical systems and electro-optic devices. It features full details of important derivations and results, and provides many practical examples of the design, construction and performance characteristics of different types of lasers and electro-optic devices.

This book is a printed edition of the Special Issue Hollow core optical fibers that was published in Fibers

Describes the wonders of light and optics, exploring such developments as lasers, fiber optics, and holography.

Introduction to Fiber Optics is well established as an introductory text for engineers, managers and students. It meets the needs of systems designers, installation engineers, electronic engineers and anyone else looking to gain a working knowledge of fiber optics with a minimum of maths. Review questions are included in the text to enable the reader to check their understanding as they work through the book. The new edition of this successful book is now fully up to date with the new standards, latest technological developments and includes a new chapter on specifying optical components. Whether you are looking for a complete self-study course in fiber optics, a concise reference text to dip into, or a readable introduction to this fast moving technology, this book has the solution. \* A practical, no-nonsense guide to fiber optics \* Up-to-date coverage that minimises mathematics \* New material on specifying optical components

Beam  
Instructor's Manual to Accompany Understanding Fiber Optics, Fifth Edition

Understanding Fibre Optics  
Handbook of Fiber Optic Data Communication

Optical Fiber Fusion Splicing  
Enabling Optical Connectivity in Today's Networks

Jeff Hecht details the intriguing story of laser-technology development througory. The revised edition of Laser Pioneers describes a race for innovative of thenatingers, process of invention.

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.

Beam Weapons describes the roots of Ronald Reagan's 'Star Wars' quest for a strategic defense system to intercept and destroy nuclear ballistic missiles before they could reach their targets. The goal was to develop radically new beam weapons that destroyed nuclear missiles with directed energy - laser beams or charged particles. The daring program was born at a time of intense technological optimism, when NASA talked of weekly space shuttle flights. Pentagon planners envisioned a fleet of orbiting laser battle stations that could blast thousands of nuclear missiles out of the sky. Critics dubbed the plan an impossible 'Star Wars' fantasy. The controversy quickly grew heated. In Beam Weapons, Jeff Hecht focuses on the core technical issues. He tells how lasers and particle beams work, explains what is needed for effective missile defense, and carefully analyzes the feasibility of proposed systems. More than 30 years later, the Cold War is history, but the technology Reagan sought remains beyond the state of the art. Originally published as Beam Weapons: The Next Arms Race in 1984, the book has a new subtitle to reflect its historical import. A new epilogue recalls key events of the intervening decades, and describes the Pentagon's new generation of more modest laser weapons.

This book is an important reference source for today's communications professionals. The book offers an overview of data communication using both fiber optics and optoelectronics. In addition, the book offers guidance regarding all the industry standards, gives a complete list of sites on the Internet and World Wide Web for more data online, and interprets professional opportunities in fiber optics.

The New Communications Technologies  
Free Space Optics

Laser, Supertool of the 1980s  
The Evolving Cable Network and Its Implications

The Story of Fiber Optics  
City of Light

Beam Weapons examines the directed-energy weapons that became a central part of the Reagan Administration's Strategic Defense Initiative, better known as "Star Wars." First published in 1984, it describes the science and technology behind directed energy weapons, the state of the art at the time Reagan launched the program, and the military issues involved. The first full-length book published on the topic, it exhaustively documents the technical and military realities and uncertainties.

The third edition of this popular text and reference book presents the fundamental principles for understanding and applying optical fiber technology to sophisticated modern telecommunication systems. Optical-fiber-based telecommunication networks have become a major information-transmission-system, with high capacity links encircling the globe in both terrestrial and undersea installations. Numerous passive and active optical devices within these links perform complex transmission and networking functions in the optical domain, such as signal amplification, restoration, routing, and switching. Along with the need to understand the functions of these devices comes the necessity to measure both component and network performance, and to model and stimulate the complex behavior of reliable high-capacity networks.

In these engaging memoirs of a maverick, Theodore H. Maiman describes the life events leading to his invention of the laser in 1960. Maiman succeeded using his expertise in physics and engineering along with an ingenious and elegant design not anticipated by others. His pink ruby laser produced mankind's first ever coherent light and has provided transformational technology for commerce, industry, telecom, the Internet, medicine, and all the sciences. Maiman also chronicles the resistance from his employer and the ongoing intrigue by competing researchers in industry and academia seeking to diminish his contribution in inventing the first laser. This work will appeal to a wide readership, from physicists and engineers through science enthusiasts to general readers. The volume includes extensive photos and documentary materials related to Maiman's life and accomplishments never before published. "No one beat Maiman to the laser. How important is the laser? How important are all lasers? That is how important we have to regard Maiman's contribution.He and the laser changed all of our lives, everyone's!"Dr. Nick Holonyak, Jr., Professor of Electrical and Computer Engineering and Physics, University of Illinois at Champaign-Urbana, and inventor of the light-emitting diode (LED) and co-inventor of the transistor laser "More than five decades later, we can safely conclude that Theodore Maiman's groundbreaking discovery changed the world. Our modern life just as scientific research would be quite different without the laser."Dr. Ferenc Krausz, Director, Max Planck Institute for Quantum Optics, Garching, Germany, and Professor of Physics, Ludwig Maximilian University, Munich, and pioneer in attosecond lasers and attophysics "Maiman had the stroke of genius needed to take a different approach [from his competitors]. The sheer elegance and simplicity of his design belies the intellectual achievement it represents. If his invention seems obvious to some today, it was far from obvious in 1960."Jeff Hecht, authoritative science writer on the historical development of the laser, author of books on lasers and fiber optics

The whole story of laser weapons with a focus on its many interesting characters and sometimes bizarre schemes The laser—a milestone invention of the mid-twentieth century—quickly captured the imagination of the Pentagon as the key to the ultimate weapon. Veteran science writer Jeff Hecht tells the inside story of the adventures and misadventures of scientists and military strategists as they exerted Herculesian though often futile efforts to adapt the laser for military uses. From the 1950s sci-fi vision of the "death ray," through the Reagan administration's "Star Wars" missile defense system, to more promising developments today, Hecht provides an entertaining history. As the author illustrates, there has always been a great deal of enthusiasm and false starts surrounding lasers. He describes a giant laser that filled a Boeing 747, lasers powered like rocket engines, plans for an orbiting fleet of robotic laser battle stations to destroy nuclear missiles, claims that nuclear bombs could produce intense X-ray laser beams, and a scheme to bounce laser beams off giant orbiting relay mirrors. Those far-out ideas remain science fiction. Meanwhile, in civilian sectors, the laser is already being successfully used in fiber optic cables, scanners, medical devices, and industrial cutting tools. Now those laser cutting tools are leading to a new generation of laser weapons that just might stop insurgent rockets. Replete with interesting characters, bizarre schemes, and wonderful inventions, this is a well-told tale about the evolution of technology and the reaches of human ambition.

Power and Paranoia in the Age of Fiber Optics  
An Introduction to Fiber Optics

An Entry-Level Guide  
Memoirs of Theodore H. Maiman

This text presents the history of the development of fibre optic technology, explaining the scientific challenges that needed to be overcome, the range of applications and future potential for this fundamental communications technology.

A work that bridges media archaeology and visual culture studies argues that the Internet has emerged as a mass medium by linking control with freedom and democracy. How has the Internet, a medium that thrives on control, been accepted as a medium of freedom? Why is freedom increasingly indistinguishable from paranoid control? In Control and Freedom, Wendy Hui Kyong Chun explores the current political and technological coupling of freedom with control by tracing the emergence of the Internet as a mass medium. The parallel (and paradoxical) myths of the Internet as total freedom/total control, she says, stem from our reduction of political problems into technological ones. Drawing on the theories of Gilles Deleuze and Michel Foucault and analyzing such phenomena as Webcams and face-recognition technology, Chun argues that the relationship between control and freedom in networked contact is experienced and negotiated through sexuality and race. She traces the desire for cyberspace to cyberpunk fiction and maps the transformation of public/private into open/closed. Analyzing "pornocracy," she contends that it was through cyberporn and the government's attempts to regulate it that the Internet became a marketplace of ideas and commodities. Chun describes the way Internet promoters conflated technological empowerment with racial empowerment and, through close examinations of William Gibson's Neuromancer and Mamoru Oshii's Ghost in the Shell, she analyzes the management of interactivity in narratives of cyberspace. The Internet's potential for democracy stems not from illusory promises of individual empowerment, Chun argues, but rather from the ways in which it exposes us to others (and to other machines) in ways we cannot control. Using fiber optic networks—light coursing through glass tubes—as metaphor and reality, Control and Freedom engages the rich philosophical tradition of light as a figure for knowledge, clarification, surveillance, and discipline, in order to argue that fiber-optic networks physically instantiate, and thus shatter, enlightenment.

This book is a MUST for everyone in and around the optics community! Fiber Optic Essentials provides professionals and students new to the field of fiber optics with a high-level knowledge of principles, theories and applications. This primer can also be used as a succinct overview of optics for those with some engineering and physics background. Individuals involved with optics in non-traditional capacities such as in marketing and legal departments will find this volume introduces basic concepts completely in an easy to read format. Casimer and Carolyn DeCusatis have provided a concise resource with compact chapters and minimal equations conveying this complex topic in a straightforward and clear-cut style. Included in this book are chapters on fibers, cables, connectors, transmitters, modulators, noise, and optical link design. Concluding this reference are three indispensable appendices covering extensive definitions, acronyms (including initials and commonly used slang), measurement conversions and physical constants. This author team has produced a book that has truly shed light on this difficult subject. Comprehensively covers basic fiber optic 'facts' Explains how optics relate to everyday life Details fiber optic communication standards Chapter included on medical applications

Timeline traces the history of optics with major milestones