

Applications of Nonlinear Fiber Optics (Optics and Photonics)

By Govind Agrawal

Download now

Read Online

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal

Most of the material in this volume is new. The first three chapters deal with three important fiber-optic components--fiber-based gratings, couplers, and interferometers--that serve as the building blocks of lightwave technology. In view of the enormous impact of rare-earth-doped fibers, amplifiers and lasers made by using such fibers are covered in Chapters 4 and 5. The last three chapters describe important applications of nonlinear fiber optics and are devoted to pulse-compression techniques, fiber-optic communication systems, and soliton-based transmission schemes. This volume should serve well the need of the scientific community interested in such fields as ultrafast phenomena, optical amplifiers and lasers, and optical communications. It will also be useful to graduate students as well as scientists and engineers involved in lightwave technology.

* Training resource for engineers involved with lightwave technology
* Covers the importance of nonlinear effects in designing WDM lightwave systems
* Up to date information for researchers

Download Applications of Nonlinear Fiber Optics (Optics and ...pdf

Read Online Applications of Nonlinear Fiber Optics (Optics a ...pdf

Applications of Nonlinear Fiber Optics (Optics and Photonics)

By Govind Agrawal

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal

Most of the material in this volume is new. The first three chapters deal with three important fiber-optic components--fiber-based gratings, couplers, and interferometers--that serve as the building blocks of lightwave technology. In view of the enormous impact of rare-earth-doped fibers, amplifiers and lasers made by using such fibers are covered in Chapters 4 and 5. The last three chapters describe important applications of nonlinear fiber optics and are devoted to pulse-compression techniques, fiber-optic communication systems, and soliton-based transmission schemes. This volume should serve well the need of the scientific community interested in such fields as ultrafast phenomena, optical amplifiers and lasers, and optical communications. It will also be useful to graduate students as well as scientists and engineers involved in lightwave technology.

* Training resource for engineers involved with lightwave technology
* Covers the importance of nonlinear effects in designing WDM lightwave systems
* Up to date information for researchers

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal Bibliography

- Sales Rank: #4802323 in Books
- Published on: 2001-01-30
- Original language: English
- Number of items: 1
- Dimensions: 1.07" h x 6.25" w x 9.31" l,
- Binding: Hardcover
- 459 pages

Download Applications of Nonlinear Fiber Optics (Optics and ...pdf

Read Online Applications of Nonlinear Fiber Optics (Optics a ...pdf

Download and Read Free Online Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal

Editorial Review

Review
As the field grew, Agrawal decided to split this text off from his Nonlinear Fiber Optics, which is more concerned with the discipline's fundamentals. This edition is intended for senior undergraduates, graduate students, engineers and technicians in the telecommunications industry, and scientists working with fiber optics and optical communications. It covers the building blocks of light-wave technology--fiber-based gratings, couplers, and interferometers--as well as amplifiers and lasers made using rare-earth-doped fibers; pulse-compression techniques; fiber-optic communication systems; and soliton-based transmission schemes.Book News, Inc.®, Portland, OR

About the Author
Govind P. Agrawal was born on July 24, 1951 in the town of Kashipur of the Nainital district in U.P. He received his B.Sc. degree from the University of Lucknow in 1969 with honors. He was awarded a gold medal for achieving the top position in the university. Govind joined the Indian Institute of Technology at New Delhi in 1969 and received the M.Sc. and Ph.D. degrees in 1971 and 1974, respectively.After holding positions at the Ecole Polytechnique (France), the City University of New York, and the Laser company, Quantel, Orsay, France, Dr. Agrawal joined in 1981 the technical staff of the world-famous AT&T Bell Laboratories, Murray Hill, N.J., USA, where he worked on problems related to the development of semiconductor lasers and fiber-optic communication systems. He joined in 1989 the faculty of the Institute of Optics at the University of Rochester where he is a Professor of Optics. His research interests focus on quantum electronics, nonlinear optics, and optical communications. In particular, he has contributed signnificantly to the fields of semiconductor lasers, nonlinear fiber optics, and optical communications. He is an author or coauthor of more than 250 research papers, several book chapters and review articles, and four books entitled "Semiconductor Lasers" (Van Nostrand Reinhold, 2nd ed. 1993), "Nonlinear Fiber Optics" (Academic Press, 3rd ed. 2001), "Fiber-Optic Communication Systems" (Wiley, 2nd ed. 1997), and "Applications of Nonlinear Fiber Optics" (Academic Press, 2001). He has also edited the books "Contemporary Nonlinear Optics" (Academic Press, 1992) and "Semiconductor Lasers: Past, Present and Future" (AIP Press, 1995). The books authored by Dr. Agrawal have influenced an entire generation of scientists. Several of them have been translated into Chinese, Japanese, Greek, and Russian.

Excerpt. © Reprinted by permission. All rights reserved.
Since the publication of the first edition of Nonlinear Fiber Optics in 1989, this field has virtually exploded. A major factor behind such tremendous growth was the advent of fiber amplifiers, made by doping silica or fluoride fibers with rare-earth ions such as erbium and neodymium. Such amplifiers revolutionized the design of fiber-optic communication systems, including those making use of optical solitons whose very existence stems from the presence of nonlinear effects in optical fibers. Optical amplifiers permit propagation of lightwave signals over thousands of kilometers as they can compensate for all losses encountered by the signal in the optical domain. At the same time, fiber amplifiers enable the use of massive wavelength-division

multiplexing (WDM) and have led to the development of lightwave systems with capacities exceeding 1 Tb/s. Nonlinear fiber optics plays an increasingly important role in the design of such high-capacity lightwave systems. In fact, an understanding of various nonlinear effects occurring inside optical fibers is almost a prerequisite for a lightwave-system designer.

While preparing the third edition of Nonlinear Fiber Optics, my intention was to bring the book up to date so that it remains a unique source of comprehensive coverage on the subject of nonlinear fiber optics. An attempt was made to include recent research results on all topics relevant to the field of nonlinear fiber optics. Such an ambitious objective increased the size of the book to the extent that it was necessary to split it into two separate books, thus creating this new book Applications of Nonlinear Fiber Optics. The third edition of Nonlinear Fiber Optics deals with the fundamental aspects of the field. This book is devoted to the applications of nonlinear fiber optics, and its use requires knowledge of the fundamentals covered in Nonlinear Fiber Optics. Please note that when an equation or section number is prefaced with the letter A, that indicates that the topic is covered in more detail in the third edition of of Nonlinear Fiber Optics.

Most of the material in this volume is new. The first three chapters deal with three important fiber-optic components--fiber-based gratings, couplers, and interferometers--that serve as the building blocks of lightwave technology. In view of the enormous impact of rare-earth-doped fibers, amplifiers and lasers made by using such fibers are covered in Chapters 4 and 5. The last three chapters describe important applications of nonlinear fiber optics and are devoted to pulse-compression techniques, fiber-optic communication systems, and soliton-based transmission schemes. This volume should serve well the need of the scientific community interested in such fields as ultrafast phenomena, optical amplifiers and lasers, and optical communications. It will also be useful to graduate students as well as scientists and engineers involved in lightwave technology.

The potential readership is likely to consist of senior undergraduate students, graduate students enrolled in the M.S. and Ph.D. programs, engineers and technicians involved with the telecommunication industry, and scientists working in the fields of fiber optics and optical communications. This volume may be a useful text for graduate and senior-level courses dealing with nonlinear optics, fiber optics, or optical communications that are designed to provide mastery of the fundamental aspects. Some universities may even opt to offer a high-level graduate course devoted solely to nonlinear fiber optics. The problems provided at the end of each chapter should be useful to instructors of such a course.

Many individuals have contributed either directly or indirectly to the completion of this book. I am thankful to all of them, especially to my students, whose curiosity led to several improvements. Some of my colleagues have helped me in preparing this book. I thank Taras Lakoba, Zhi Liao, Natalia Litchinitser, Bishnu Pal, and Stojan Radic for reading several chapters and making helpful suggestions. I am grateful to many readers for their feedback. Last, but not least, I thank my wife, Anne, and my daughters, Sipra, Caroline, and Claire, for understanding why I needed to spend many weekends on the book instead of spending time with them.

Govind Agrawal
Rochester, NY

Users Review

From reader reviews:

Hazel Mishler:

Why don't make it to be your habit? Right now, try to ready your time to do the important take action, like looking for your favorite reserve and reading a publication. Beside you can solve your problem; you can add your knowledge by the publication entitled Applications of Nonlinear Fiber Optics (Optics and Photonics). Try to make book Applications of Nonlinear Fiber Optics (Optics and Photonics) as your pal. It means that it can to become your friend when you sense alone and beside associated with course make you smarter than before. Yeah, it is very fortuned in your case. The book makes you much more confidence because you can

know anything by the book. So , let us make new experience and also knowledge with this book.

James Roberts:

A lot of people always spent their particular free time to vacation or even go to the outside with them household or their friend. Do you know? Many a lot of people spent that they free time just watching TV, or playing video games all day long. If you need to try to find a new activity honestly, that is look different you can read any book. It is really fun for yourself. If you enjoy the book that you simply read you can spent 24 hours a day to reading a reserve. The book Applications of Nonlinear Fiber Optics (Optics and Photonics) it is quite good to read. There are a lot of people who recommended this book. They were enjoying reading this book. When you did not have enough space to develop this book you can buy often the e-book. You can m0ore easily to read this book from the smart phone. The price is not too costly but this book has high quality.

Rick Braden:

People live in this new morning of lifestyle always aim to and must have the spare time or they will get lots of stress from both everyday life and work. So , when we ask do people have time, we will say absolutely of course. People is human not a robot. Then we consult again, what kind of activity have you got when the spare time coming to you of course your answer will certainly unlimited right. Then ever try this one, reading publications. It can be your alternative in spending your spare time, the particular book you have read is Applications of Nonlinear Fiber Optics (Optics and Photonics).

Maryann Warren:

In this period globalization it is important to someone to get information. The information will make a professional understand the condition of the world. The condition of the world makes the information much easier to share. You can find a lot of recommendations to get information example: internet, newspaper, book, and soon. You will observe that now, a lot of publisher in which print many kinds of book. Typically the book that recommended for your requirements is Applications of Nonlinear Fiber Optics (Optics and Photonics) this reserve consist a lot of the information from the condition of this world now. This kind of book was represented how do the world has grown up. The dialect styles that writer use for explain it is easy to understand. Typically the writer made some investigation when he makes this book. That is why this book suitable all of you.

Download and Read Online Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal #RN4W3C59D7Y

Read Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal for online ebook

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal books to read online.

Online Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal ebook PDF download

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal Doc

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal Mobipocket

Applications of Nonlinear Fiber Optics (Optics and Photonics) By Govind Agrawal EPub