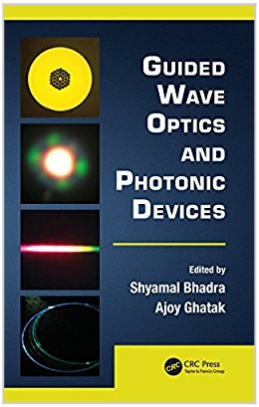


# Guided Wave Optics and Photonic Devices (Optics and Photonics)

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**Guided Wave Optics and Photonic Devices (Optics and Photonics)** From Brand: CRC Press

**Guided Wave Optics and Photonic Devices** introduces readers to a broad cross-section of topics in this area, from the basics of guided wave optics and nonlinear optics to biophotonics. The book is inspired by and expands on lectures delivered by distinguished speakers at a three-week school on guided wave optics and devices organized at the CSIR-Central Glass and Ceramic Research Institute in Kolkata in 2011.

***An Introduction to Guided Wave Optics and Photonic Devices: Principles, Applications, and Future Directions***

The book discusses the concept of modes in a guided medium from first principles, emphasizing the importance of dispersion properties in optical fibers. It describes fabrication and characterization techniques of rare-earth-doped optical fibers for amplifiers and lasers, with an eye to future applications. Avoiding complex mathematical formalism, it also presents the basic theory and operational principles of fiber amplifiers and lasers. The book examines techniques for writing fiber Bragg gratings, which are of particular interest for smart sensing applications. A chapter focuses on the fundamental principles of Fourier optics and its implementation in guided wave optics.

In addition, the book explains the critical phenomena of soliton dynamics and supercontinuum generation in photonic crystal fiber, including its fabrication process and characteristics. It also looks at plasmonics in guided media and nonlinearity in stratified media?both key areas for future research. The last chapter explores the importance of lasers in biophotonic applications.

Written by experts engaged in teaching, research, and development in optics and photonics, this reference brings together fundamentals and recent advances in one volume. It offers a valuable overview of the field for students and researchers alike and identifies directions for future research in guided wave and photonic device technology.

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## Editorial Review

Review

"Nice fundamental reviews form the basis for more advanced topical coverage. The excellent cast of contributors provides credible treatment of diverse fields of optics and photonics. ... This book provides an excellent overview of dynamic interdisciplinary fields."
?Dr. Mark A. Mentzer, US Army Research Laboratory

"This book is based on a three-week course held in India in 2011. It has 20 chapters covering a wide range of topics, from the basics of optical fibers and guided wave optics to biophotonics. ... There is even a wonderful chapter of guided-wave Fourier optics. Overall, the individual chapters are well-written and illustrated. The concepts are clearly explained and not lost in the mathematics. This would be an easy read for advanced undergraduates and graduate students who are interested in photonics research, especially guided-wave technology. The editors should be congratulated on their choice of topics in this coherent and self-consistent book."
?Vasudevan Lakshminarayanan, University of Waterloo, Ontario, Canada, from *Optics and Photonics News*

About the Author

**Shyamal Bhadra** received his Ph.D. from Jadavpur University, Kolkata. After working at Carl Zeiss, Dr. Bhadra joined the CSIR-Central Glass and Ceramic Research Institute (CSIR-CGCRI), Kolkata, in 1984, where he is currently Chief Scientist. He leads a group working in advanced areas of fiber optics, photonics, and nonlinear optics. He has worked closely with industry to bring out products such as EDFA and super-continuum source generators. Dr. Bhadra has published more than sixty research papers and has five patents to his credit. Presently he is the honorary editor of the journal *Transactions of the Indian Ceramic Society*. He is the recipient of the Deokaran award in glass given by the Indian Ceramic Society. Dr Bhadra is also one of the recipients of the prestigious "Most Significant CSIR Technology of Five-Year Plan Period Award 2012" for commercialization of EDFA technology in India.

**Ajoy Ghatak** obtained his Ph.D. from Cornell University. He recently retired from IIT Delhi as professor of physics. He received the 2008 SPIE Educator award in recognition of "his unparalleled global contributions to the field of fiber optics research, and his tireless dedication to optics education worldwide" and the 2003 OSA Esther Hoffman Beller award in recognition of his "outstanding contributions to optical science and engineering education." He is also a recipient of the CSIR SS Bhatnagar award, 16th Khwarizmi International award, the International Commission for Optics Galileo Galilei award, and the UGC Meghnad Saha Award for his contributions in fiber optics. He has authored several books, including *Optics, Introduction to Fiber Optics and Optical Electronics,* and *Albert Einstein: A Glimpse of His Life, Philosophy and Science*. He received a D.Sc. (Honoris Causa) from the University of Burdwan in 2007.

## Users Review

**From reader reviews:**

**Martin Adams:**

This Guided Wave Optics and Photonic Devices (Optics and Photonics) is great guide for you because the content that is certainly full of information for you who else always deal with world and have to make decision every minute. This book reveal it information accurately using great plan word or we can claim no rambling sentences inside. So if you are read this hurriedly you can have whole info in it. Doesn't mean it only will give you straight forward sentences but hard core information with lovely delivering sentences. Having Guided Wave Optics and Photonic Devices (Optics and Photonics) in your hand like keeping the world in your arm, details in it is not ridiculous one. We can say that no publication that offer you world throughout ten or fifteen second right but this book already do that. So , this is good reading book. Hi Mr. and Mrs. occupied do you still doubt that?

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