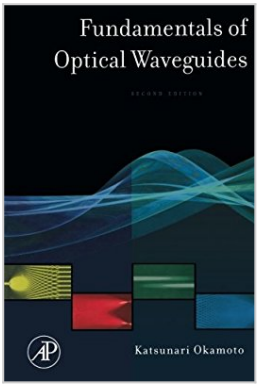

Fundamentals of Optical Waveguides, Second Edition

By Katsunari Okamoto

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Fundamentals of Optical Waveguides is an essential resource for any researcher, professional or student involved in optics and communications engineering. Any reader interested in designing or actively working with optical devices must have a firm grasp of the principles of lightwave propagation. Katsunari Okamoto has presented this difficult technology clearly and concisely with several illustrations and equations. Optical theory encompassed in this reference includes coupled mode theory, nonlinear optical effects, finite element method, beam propagation method, staircase concatenation method, along with several central theorems and formulas.

Since the publication of the well-received first edition of this book, planar lightwave circuits and photonic crystal fibers have fully matured. With this second edition the advances of these fibers along with other improvements on existing optical technologies are completely detailed. This comprehensive volume enables readers to fully analyze, design and simulate optical atmospheres.

* Exceptional new chapter on Arrayed-Waveguide Grating (AWG)
* In depth discussion of Photonic Crystal Fibers (PCFs)
* Thorough explanation of Multimode Interference Devices (MMI)
* Full coverage of polarization Mode Dispersion (PMD)

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Editorial Review

Review
"...the second edition of Fundamentals of Optical Waveguides emphasizes optical theory, including coupled-mode theory, nonlinear optical effects, and finite element, beam propagation and staircase concatenation methods...A new chapter on arrayed-waveguide grating discusses the principles of operation, fundamental characteristics and analytical treatment of the grating demultiplexing properties." - Photonics Spectra, Sept. 2006

From the Back Cover
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About the Author:
Katsunari Okamoto was born in Hiroshima, Japan, on October 19, 1949. He received the B.S., M.S., and Ph.D. in electronic engineering from Tokyo University, Japan, in 1972, 1974, and 1977, respectively. He has engaged in research on the transmission characteristics of various fibers, including PANDA fibers, as well as fiber-optic components, and proposed the idea of dispersion-flattened fibers (DFF) on which he has also experimented. Dr. Okamoto has worked for the Optical Fiber Group in Southampton, England and the NTT Photonics Laboratories at the Ibaraki R&D Center, where he developed various AWGs and integrated-optic add/drop multiplexers. He is a fellow of IEEE and a research fellow of NTT Science and Core Technology Laboratory Group. In 2003, he started Okamoto Laboratory Ltd. Okamoto Laboratory is an R&D consulting company that deals with the custom design of optical fibers and functional planar lightwave circuits.

About the Author
Katsunari Okamoto was the recipient of the IEEE/LEOS Distinguished Lecturer Award in July 1977. Born in Hiroshima, Japan, on October 19, 1949, he received the B.S., M.S., and Ph.D. degrees in electronics engineering from Tokyo University, Tokyo, Japan, in 1972, 1974, and 1977, respectively.He joined Ibaraki Electrical Communication Laboratory, Nippon Telegraph and Telephone Corporation, Ibaraki, Japan, in 1977, and was engaged in the research on transmission characteristics of multimode, dispersion-flattened

single-mode, single-polarization (PANDA) fibers, and fiber-optic components. As for the dispersion-flattened fibers (DSF), he first proposed the idea and confirmed experimentally.From September 1982 to September 1983, he joined Optical fiber Group, Southampton University, Southampton, England, where he was engaged in the research on birefringent (Bow-tie) optical fibers.Since October 1988, he has been working on the analysis and synthesis of the guided wave devices, the computer-aided-design (CAD) and fabrication of the silica-based planer lightwave circuits at Ibaraki R&D Center, NTT Opto-electronics Laboratories. He has developed 126ch-25GHz spacing AWGs, flat spectral response AWGs and integrated-optic add/drop multiplexers.He is presently a research fellow at the Okamoto Research Laboratory in NTT Photonics Laboratories. He has served as a LEOS Distinguished Lecturer ('97-'98). He has also served as one of the Topical Editors for *IEEE Journal of Selected Topics in Quantum Electronics* ('96 and '99). He has been a program committee member of LEOS Annual Meeting ('97 and '99) and Topical Meeting ('97 and '99). He is currently an International Liaison of OFC for Asia/Pacific Rim region ('98~). He published more than 100 papers and authored or co-authored 8 books.Dr. Okamoto is a member of the Institute of Electrical and Electronics Engineers, Optical Society of America, the Institute of Electronics, Information and Communication engineers of Japan and the

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