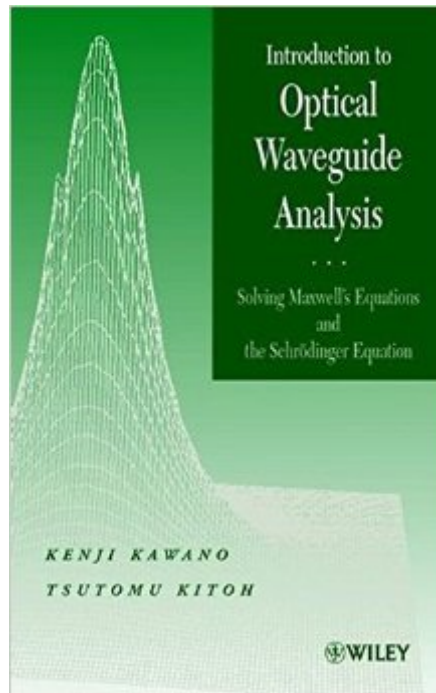# Introduction To Optical Waveguide Analysis: Solving Maxwell's Equation And The Schrodinger Equation

Synopsis

A complete survey of modern design and analysis techniques for optical waveguides This volume thoroughly details modern and widely accepted methods for designing the optical waveguides used in telecommunications systems. It offers a straightforward presentation of the sophisticated techniques used in waveguide analysis and enables a quick grasp of modern numerical methods with easy mathematics. The book is intended to guide the reader to a comprehensive understanding of optical waveguide analysis through self-study. This comprehensive presentation includes: * An extensive and exhaustive list of mathematical manipulations * Detailed explanations of common design methods: finite element method (FEM), finite difference method (FDM), beam propagation method (BPM), and finite difference time-domain method (FD-TDM) * Explanations for numerical solutions of optical waveguide problems with sophisticated techniques used in modern computer-aided design (CAD) software * Solutions to Maxwell's equations and the Schrodinger equation The authors provide excellent self-study material for practitioners, researchers, and students, while also presenting detailed mathematical manipulations that can be easily understood by readers who are unfamiliar with them. Introduction to Optical Waveguide Analysis presents modern design methods in a comprehensive and easy-to-understand format.

Book Information

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Customer Reviews

This slender volume attempts to present, as the preface says, a detailed review of the most important numerical analysis techniques for calculating modes and beam propagation in optical

waveguides and fibers. If that's what you're after and you're not already expert in this area, it's well worth buying. The authors are both long-time practioners of these arcane arts in major Japanese firms, and it shows. On the other hand, it was originally written in Japanese and the authors are industrial researchers, not teachers; and to some extent that shows also. But I'm glad to have it, haven't encountered anything better in this area, and have no hesitation in recommending it.

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