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Nota di contenuto	Title Page; Table of Contents; Preface; List of Acronyms; List of Symbols; 1 Electromagnetic Theory of Light; Introduction; 1.1 Electromagnetic Waves; 1.2 Monochromatic Waves; 1.3 Wave Equation Formulation in Terms of the Transverse Field Components; References; 2 The Beam-Propagation Method; Introduction; 2.1 Paraxial Propagation: The Slowly Varying Envelope Approximation (SVEA). Full Vectorial BPM Equations; 2.2 Semi-Vectorial and Scalar Beam Propagation Equations; 2.3 BPM Based on the Finite Difference Approach; 2.4 FD-Two-Dimensional Scalar BPM; 2.5 Von Neumann Analysis of FD-BPM 2.6 Boundary Conditions 2.7 Obtaining the Eigenmodes Using BPM; References; 3 Vectorial and Three-Dimensional Beam Propagation Techniques; Introduction; 3.1 Two-Dimensional Vectorial Beam Propagation Method; 3.2 Three-Dimensional BPM Based on the Electric Field; 3.3 Three-Dimensional BPM Based on the Magnetic Field; References; 4 Special Topics on BPM; Introduction; 4.1 Wide-Angle Beam Propagation Method; 4.2 Treatment of Discontinuities in BPM; 4.3

Bidirectional BPM; 4.4 Active Waveguides; 4.5 Second-Order Non-Linear Beam Propagation Techniques; 4.6 BPM in Anisotropic Waveguides
4.7 Time Domain BPM4.8 Finite-Difference Time-Domain Method (FD-TD); References; 5 BPM Analysis of Integrated Photonic Devices; Introduction; 5.1 Curved Waveguides; 5.2 Tapers: Y-Junctions; 5.3 Directional Couplers; 5.4 Multimode Interference Devices; 5.5 Waveguide Gratings; 5.6 Arrayed Waveguide Grating Demultiplexer; 5.7 Mach-Zehnder Interferometer as Intensity Modulator; 5.8 TE-TM Converters; 5.9 Waveguide Laser; 5.10 SHG Using QPM in Waveguides; References; Appendix A Finite Difference Approximations of Derivatives; A.1 FD-Approximations of First-Order Derivatives
A.2 FD-Approximation of Second-Order DerivativesAppendix B Tridiagonal System: The Thomas Method Algorithm; Reference; Appendix C Correlation and Relative Power between Optical Fields; C.1 Correlation between Two Optical Fields; C.2 Power Contribution of a Waveguide Mode; References; Appendix D Poynting Vector Associated to an Electromagnetic Wave Using the SVE Fields; D.1 Poynting Vector in 2D-Structures; D.2 Poynting Vector in 3D-Structures; Reference; Appendix E Finite Difference FV-BPM Based on the Electric Field Using the Scheme Parameter Control; E.1 First Component of the First Step
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