

Simulation of weakly guiding optical fibers by finite element method with exact boundary condition

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Abstract

© 2001 IEEE. This work presents a new approach to the numerical simulation of optical fibers. The finite element method with exact boundary condition is formulated and practically studied. This method has a good inner convergence by the number of mesh points and Fourier's harmonics. The method is used for effective calculation of a new type of optical fiber.

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Keywords

Boundary conditions, Dielectrics, Eigenvalues and eigenfunctions, Erbium, Finite element methods, Mathematics, Optical fibers, Optical harmonic generation, Permittivity, Propagation constant