Abstracts

Comparison of Numerical and Effective-Index Methods for a Class of Dielectric Waveguides

A numerical method and the effective-index method are applied to a three-layer, constant thickness dielectric waveguide with smoothly varying dielectric constant inside the active layer and constant permittivity in the confining layers. The results of the two methods are compared in terms of the propagation constant gamma calculated by each method. Application of the effective-index method facilitates a physical understanding of dielectric waveguide modes as well as providing an efficient approximate method for calculating mode behavior.

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