Planar Optical Waveguide Analysis Methods

Planar Optical Waveguides circuits and semiconductor lasers. Generally, rectangular waveguides consist of a square or rectangular core surrounded by a cladding with lower refr

Therefore, this chapter first describes two-dimensional slab waveguides to acquire a fundamental understanding of optical waveguides. Then several analytical approximations are presented to ...

Two applications of this theory are demonstrated with examples using specified reflection coefficients: design of a single-mode inhomogeneous optical waveguide and design of an optical logic...

Waveguides formed on a flat substrate are called planar waveguides. These are typically made by stepwise deposition of films of dielectric materials (typically glass). The waveguide core is defined by ...

Abstract: We present here a simple matrix method for obtaining propagation characteristics, including losses for various modes of an arbitrarily graded planar waveguide structure which may have media ...

We present a numerical approach to compute and characterize both guided and leaky modes in a multilayer planar optical waveguide made of any lossy and dispersive materials.

Since the early 1980s there has been considerable interest and activity in the numerical analysis and modeling of planar waveguide structures because of their important integrated optics applications.

In this paper, a general method for analyzing arbitrary planar negative-refractive-index (NRI) multilayer slab optical waveguide structures was proposed.

Additionally, an analysis of planner waveguides based on ray-optical approach and Maxwell"s equations approach is investigated. In this context, types of modes, dispersion, cutoff frequency, and effective ...

Al-though waveguides can be created in numerous geometries, this article focuses on waveguides with a planar geometry that are used to study thin films and interfaces.

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