Abstracts

Analysis of Electromagnetic-Wave Modes in Anisotropic Slab Waveguide

Y. Satomura, M. Matsuhara and N. Kumagai. "Analysis of Electromagnetic-Wave Modes in Anisotropic Slab Waveguide." 1974 Transactions on Microwave Theory and Techniques 22.2 (Feb. 1974 [T-MTT]): 86-92.

Electromagnetic-wave modes propagating in anisotropic slab waveguide are analyzed theoretically in detail. The propagation conditions are derived under which waves can propagate along the axis of the guide. A two-dimensional three-layered waveguiding structure consisting of an anisotropic dielectric slab coated on, or immersed in, isotropic surrounding substrate materials is considered as a typical configuration of the guide. Field-intensity distributions of the propagating modes and their propagation constants are obtained by numerical computations. Techniques for achieving the mode discrimination and the single-mode operation are given. Some possible applications in integrated optics are suggested.

❑ Return to main document.