Abstracts

Wave Propagation in Inhomogeneous Anisotropic Rectangular Waveguides by the Effective Index Method

M.N. Armenise and M. De Sario. "Wave Propagation in Inhomogeneous Anisotropic Rectangular Waveguides by the Effective Index Method." 1981 MTT-S International Microwave Symposium Digest 81.1 (1981 [MWSYM]): 498-500.

Hybrid mode dispersion and mapping of multilayer rectangular diffused birifrangent waveguides are studied by the effective index method for two orientations, horizontal and vertical, of the crystal optic axis. At first the structure is examined in the approximate lossless approach, then the perturbation technique allows us to evaluate the extinction coefficient value to employ as starting point in the direct search optimization strategy for determining the complex propagation constant for the exact solution. The guided E/sup x//sub 11/ and E/sup y//sub 11/ modes exhibit almost the same cutoff wavelength and their dispersion curves little differ from the ones of corresponding TM/sub 0/, up to 1 µm for vertical optic axis because of the surface plasma waves, and TE/sub 0/ modes of the slab waveguide without and with the metal film respectively.

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