Abstracts

TE-TM Mode Conversion of an Optical Beam Wave in Thin-Film Optical Waveguides (Short Papers)

K. Hano. "TE-TM Mode Conversion of an Optical Beam Wave in Thin-Film Optical Waveguides (Short Papers)." 1988 Transactions on Microwave Theory and Techniques 36.4 (Apr. 1988 [T-MTT]): 783-785.

This paper describes the TE-TM mode conversion efficiency when a Gaussian beam wave propagates in thin-film optical waveguides. For film thicknesses at which strong coupling between the TE and TM modes is obtained, two hybrid modes have oppositely rotating circular polarizations, or linear polarizations perpendicular to each other with equal magnitude of TE and TM wave components. In the former (i.e., circular polarization), complete TE-TM mode conversion is impossible. In the latter (i.e., linear polarization) complete TE-TM mode conversion is available. These claims are based on the fact that the direction of power flow of the hybrid modes depends on the polarization.

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