Abstracts

Theory for Electrooptical Grating Modulators

R.S. Chu, J.A. Kong and DL. Lee. "Theory for Electrooptical Grating Modulators." 1976 MTT-S International Microwave Symposium Digest of Technical Papers 76.1 (1976 [MWSYM]): 24-26.

A popular configuration for electrooptical modulators used in integrated optics consists of periodic electrodes placed on the surface of a thin film waveguide made of electrooptical material. When voltages are applied to the electrodes, the thin film guide becomes spatially modulated with periodicity equal to that of the electrodes. Guided light is diffracted after passing through the modulated region. Experiments have been performed with light normally incident upon the periodic medium as well as incident at the Bragg angle. The measured results were interpreted with well-known theories applicable either in the Raman-Nath regime or in the Phariseau limit. In cases when both limits can not be applied, Klein and Cook devised a numerical solution in which they approximated differential equations by difference equations. The check of the experimental results with these theories has not been satisfactory, especially when the modulation voltage is large.

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