

# Abstracts

## Integrated Optics at 10.6- $\mu$ m Wavelength

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W.S.C. Chang. "Integrated Optics at 10.6- $\mu$ m Wavelength." 1975 *Transactions on Microwave Theory and Techniques* 23.1 (Jan. 1975 [T-MTT] (Special Issue on Integrated Optics and Optical Waveguides)): 31-44.

While the major objective of integrated optics at the visible-light and near-infrared wavelength is to provide thin-film components to obtain switching, modulation, source, detection, etc., for fiber-optics communication, the immediate objective of integrated optics at the 10.6- $\mu$ m wavelength is to improve the operational characteristics of conventional bulk components via guided-wave technology. This paper will discuss the properties of the waveguides, the modulators, the passive components, and the waveguide laser that have been made to date. The most significant advancement is probably guided-wave modulation. Both the analysis and the initial experimental measurements indicate that pi-phase or 100-percent amplitude UHF-VHF modulation could be obtained with only a few hundred watts of modulation drive power. Microwave modulation has also been experimentally demonstrated. Naturally, this is only an interim report. Many exciting developments will be obtained in the future.

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