Abstracts

A Technique to Identify Electromagnetic Modes in Oversize Waveguides (Short Papers)

Y. Carmel, K.R. Chu, M.E. Read, V.L. Granatstein, G. Faillon, P. Boulanger, E. Kammerer and G. Mourier. "A Technique to Identify Electromagnetic Modes in Oversize Waveguides (Short Papers)." 1984 Transactions on Microwave Theory and Techniques 32.11 (Nov. 1984 [T-MTT]): 1493-1495.

There are problems associated with the multimode character of oversize waveguides. This paper reports on a novel, direct way to identify modes in an oversize waveguide by looking at the field map on a liquid crystal sheet inserted in the waveguide. The local temperature change in the liquid crystal due to absorbed microwave energy is translated to a color change in such a way that a map of the Iocal power flow is observed on the sheet. Mode identification is very important in gyrotrons, for example, where the microwave energy generating device is subject to severe problems from mode competition.

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