Abstracts

Microwave Complex Conductivity of a Square Post in Rectangular Waveguide

S. Yoshikado and I. Taniguchi. "Microwave Complex Conductivity of a Square Post in Rectangular Waveguide." 1989 Transactions on Microwave Theory and Techniques 37.6 (Jun. 1989, Part I [T-MTT]): 984-992.

A simple measurement technique for the complex conductivity of a square lossy dielectric post loaded in a rectangular waveguide is described. The measurement technique is based on a solution of the reflection coefficient for the incident electric field of the TE/sub 10/ mode. The reflection coefficient can be expressed by a simple formula for the electric fields scattered from the post. Values of complex conductivities of standard materials were calculated by applying an iteration method to this formula with respect to measured values of reflection coefficients. These agreed with the values measured by other techniques and reported by several authors. The present method is also applicable to measurements related to filling the cross section of the waveguide with a dielectric material.

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