Abstracts

Characterization of complex permittivity properties of materials in rectangular waveguides using a hybrid iterative method

H. Esteban, J.M. Catala-Civera, S. Cogollos and V.E. Boria. "Characterization of complex permittivity properties of materials in rectangular waveguides using a hybrid iterative method." 2000 Microwave and Guided Wave Letters 10.5 (May 2000 [MGWL]): 186-188.

In many microwave applications, an accurate knowledge of the complex permittivity properties of materials is usually required. A new procedure for the accurate determination of these properties is presented, based on an optimization algorithm that makes use of measured scattering parameters and simulated results of a cylindrical rod of dielectric material passing completely through a rectangular waveguide. The simulation tool employed consists of a very accurate hybrid iterative method. Results for the permittivity properties of ethanol (high-loss liquid material) are presented and validated with results from the literature.

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