Abstracts

Optimized Method for Obtaining Permittivity and Conductivity Profiles of Microwave Materials (Short Papers)

M.A. Hindy. "Optimized Method for Obtaining Permittivity and Conductivity Profiles of Microwave Materials (Short Papers)." 1989 Transactions on Microwave Theory and Techniques 37.5 (May 1989 [T-MTT]): 922-925.

A new iterative method for obtaining the distribution of the relative permittivity epsilon/sub r/(z) or electrical conductivity sigma(z) of microwave semiconducting materials is presented. The semiconducting material is fitted in a rectangular waveguide which is terminated by a variable short circuit. The reflection coefficients of the system are measured at a single frequency and at different positions of the moving short. The measured coefficients are used in the iterative process of solving the inverse problem by obtaining the functional gradient. The method takes into account continuous and discontinuous profiles.

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