Abstracts

High-Accuracy Wide-Range Measurement Method for Determination of Complex Permittivity in Reentrant Cavity: Part A --- Theoretical Analysis of the Method

A. Kaczkowski and A. Milewski. "High-Accuracy Wide-Range Measurement Method for Determination of Complex Permittivity in Reentrant Cavity: Part A --- Theoretical Analysis of the Method." 1980 Transactions on Microwave Theory and Techniques 28.3 (Mar. 1980 [T-MTT]): 225-228.

New mathematical method for calculation of complex electric permittivity (epsilon) of a wide range of materials from the direct measured parameters of a reentrant cavity containing a sample of material is presented. Condition of resonance is drawn based on analysis of electromagnetic field distribution in the cavity with a sample. Accuracy of the obtained algorithm (convergences of series) and method of shortening iterative solution is discussed in detail.

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