Abstracts

Accurate microwave resonant method for complex permittivity measurements of liquids [biological]

K.B. Yu, S.G. Ogourtsov, V.G. Belenky, A.B. Maslenikov and A.S. Omar. "Accurate microwave resonant method for complex permittivity measurements of liquids [biological]." 2000 Transactions on Microwave Theory and Techniques 48.11 (Nov. 2000, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 2159-2164.

A method available for accurate measurements of lossy liquids is presented, tested on standard materials, and compared with the perturbation technique commonly adopted in cavity measurements. The method is based on numerically solving a complex characteristic equation. Realization of the method was done using an E/sub 010/ cylindrical cavity. Results show that measurement errors may be decreased with application of the method presented. The method excludes uncertainties in complex permittivity determination when material has losses and high permittivity.

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