Abstracts

A Comparative Study of Four Open-Ended Coaxial Probe Models for Permittivity Measurements of Lossy Dielectric/Biological Materials at Microwave Frequencies

D. Berube, F.M. Ghannouchi and P. Savard. "A Comparative Study of Four Open-Ended Coaxial Probe Models for Permittivity Measurements of Lossy Dielectric/Biological Materials at Microwave Frequencies." 1996 Transactions on Microwave Theory and Techniques 44.10 (Oct. 1996, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 1928-1934.

A comparative study of four open-ended coaxial probe models which relate the coaxial line end impedance to the complex permittivity of the material under test is presented. The accuracy of the models in measuring lossy dielectric/biological material and their robustness as a function of the calibration materials are investigated. The four open-ended coaxial probe models studied are: capacitive model, antenna model, virtual line model, and rational function model. Experimental results taken on saline solutions as lossy materials are obtained for the four models.

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