Abstracts

Broad-Band Simultaneous Measurement of the Complex Permittivity Tensor for Uniaxial Materials Using a Coaxial Discontinuity

N.-E. Belhadj-Tahar and A. Fourrier-Lamer. "Broad-Band Simultaneous Measurement of the Complex Permittivity Tensor for Uniaxial Materials Using a Coaxial Discontinuity." 1991 Transactions on Microwave Theory and Techniques 39.10 (Oct. 1991 [T-MTT]): 1718-1724.

A technique is presented for simultaneously measuring the complex values of the permittivity tensor of uniaxial materials. A gap in a coaxial line is filled with the material under test. Complex elements of the permittivity tensor are computed from measurements of the S parameters (S/sub 11/ and S/sub 21/) made on the gap taking into account higher order modes excited at the discontinuity. Measured complex permittivity data are presented from 45 MHz up to 18 GHz. This technique shows good agreement between calculated and generally accepted values.

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