Abstracts

Two Partially Filled Cavity-Resonator Techniques for the Evaluation of Scalar Permittivity and Permeability of Ferrites (Correspondence)

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The two cavity-resonator techniques described earlier for measuring pure dielectrics, one using rod samples in the cylindrical cavity system, and the other using slabs in a rectangular cavity system, have been extended for measuring magnetic dielectrics such as ferrites. As there are four parameters that need to be evaluated, i.e., epsilon/sub r/, μ/sub r/tan/sub e/delta, and tan/sub m/delta/; four independent measurements, two of the wavelengths in the partially filled portion, and two of the Q are needed. These two sets of measurements may either be obtained by using two different samples as in Srivastava's method, or by using only one sample and obtaining the second set of measurements at a slightly different frequency (2 to 5 percent difference) and assuming that both μ and epsilon remain unaltered at this frequency. Since the cavities used in these methods are tunable, the second alternative, giving the unique advantage of using only one sample, is available.

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