Abstracts

Inhomogeneous Open-Ended Resonators as Microwave Sensor Elements

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Inhomogeneous open-ended coaxial line resonators terminated by multilayer media have been investigated with regard to their application for the determination of the (local) permittivity of dielectric materials. A multisectional transmission-line model is presented which characterizes the experimental arrangement. The fringing capacitance at the open aperture is computed for the electrostatic case. Experimental and theoretical results for the attainable frequency shift due to the variation of the permittivity of the termination structure, compared with the respective case of the homogeneous resonator, will be presented.

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