Abstracts

The Electric-Field Probe Near a Material Interface with Application to the Probing of Fields in Biological Bodies

G.S. Smith. "The Electric-Field Probe Near a Material Interface with Application to the Probing of Fields in Biological Bodies." 1979 Transactions on Microwave Theory and Techniques 27.3 (Mar. 1979 [T-MTT]): 270-278.

A theoretical model is formulated to determine the effect of an interface between different media on the response of an electric-field probe. The model used provides a "worst case" estimate of the interaction between the probe and the interface. The effect of the interface on the response of the probe is examined as a function of the size of the probe, the insulation on the probe, the load admittance at the terminals of the probe, the dissipation in the surrounding medium and the spacing between the probe and the interface. The use of electricity small bare and insulated probes to measure the field in the interior of biological bodies is discussed as an example. Measured results are shown to be in general agreement with the theory.

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