Abstracts

In Vivo Probe Measurement Technique for Determining Dielectric Properties at VHF through Microwave Frequencies

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A novel probe technique for the determination of dielectric properties of semisolid materials and living tissues in situ is described experimentally and theoretically. This method, based on an antenna modeling theorem, offers unique advantages over conventional dielectric measurements techniques including 1) an ability to perform living (in vivo) tissue dielectric measurements, 2) elimination of the need for tedious sample preparation, 3) the ability to obtain continuous dielectric property data from below 0.1 GHz to above 10 GHz, and 4) the ability to process data on a real time basis. Results of system performance evaluation via measurements of standard liquid dielectric and in vivo tissue data are presented.

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