Abstracts

Muscle-Equivalent Phantom Materials for 10-100 MHz (Short Papers)

M.J. Hagmann, R.L. Levin, L. Calloway, A.J. Osborn and K.R. Foster. "Muscle-Equivalent Phantom Materials for 10-100 MHz (Short Papers)." 1992 Transactions on Microwave Theory and Techniques 40.4 (Apr. 1992 [T-MTT]): 760-762.

New tissue-simulating materials are described which are aqueous solutions. Glycine is used to obtain the large permittivity of muscle at frequencies below 100 MHz. The lack of suspended solids simplifies preparation, and ensures the dielectric properties are homogeneous, stable and reproducible. The solutions are transparent, facilitating placement of probes for measuring temperature or electric field. The optical clarity of the phantom mixtures may also be desirable in a quick assessment of RF applicators by the use of liquid crystalline display sheets. Long-term stable gelling, with no measurable change in dielectric properties, can be obtained with 1 to 2 percent of agarose or carrageenan.

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