Abstracts

Dry Phantom Composed of Ceramics and Its Application to SAR Estimation

T. Kobayashi, T. Nojima, K. Yamada and S. Uebayashi. "Dry Phantom Composed of Ceramics and Its Application to SAR Estimation." 1993 Transactions on Microwave Theory and Techniques 41.1 (Jan. 1993 [T-MTT]): 136-140.

A dry phantom material having the same electric properties in the UHF band as biological tissues is developed. The new composite material is composed of microwave ceramic powder, graphite powder, and bonding resin. This material overcomes the various problems inherent in the conventional jelly phantom material, such as dehydration and deterioration due to invasion of bacteria or mold. This innovation of the phantom material makes it possible to accomplish highly reliable and precise estimation of specific absorption rate (SAR) in biological systems. Dry phantom models of spheres and human heads are fabricated. Experiments are performed to estimate the SAR of human heads exposed to microwave sources by using the thermography method. Since this material removes the necessity of the phantom shell indispensable with the conventional jelly material, the surface SAR distribution can be readily obtained.

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