Abstracts

The SAR evaluation method by a combination of thermographic experiments and biological tissue-equivalent phantoms

Y. Okano, K. Ito, I. Ida and M. Takahashi. "The SAR evaluation method by a combination of thermographic experiments and biological tissue-equivalent phantoms." 2000 Transactions on Microwave Theory and Techniques 48.11 (Nov. 2000, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 2094-2103.

Many different phantoms have been proposed as human head models for experimental estimation of the electromagnetic energy field induced in the human head caused by the use of an RF device. Here, a biotic tissue-equivalent solid phantom is introduced as the human head model realizing the same relative dielectric constant and conductivity as brain tissue and skull layer. This brain-equivalent solid phantom and skull-equivalent phantom make it possible to accomplish highly reliable and precise estimation of specific absorption rate (SAR) in the human head. The phantom models of cube, sphere, and realistic human heads are fabricated. Measurements are performed to estimate the SAR in the human head models exposed to microwave sources by using the thermographic method.

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