Abstracts

Temperature Control and Thermal Dosimetry by Microwave Radiometry in Hyperthermia

L. Dubois, J.-P. Sozanski, V. Tessier, J.-C. Camart, J.-J. Fabre, J. Pribetich and M. Chive. "Temperature Control and Thermal Dosimetry by Microwave Radiometry in Hyperthermia." 1996 Transactions on Microwave Theory and Techniques 44.10 (Oct. 1996, Part II [T-MTT] (Special Issue on Medical Application and Biological Effects of RF/Microwaves)): 1755-1761.

This paper presents a synthesis of works undertaken by the Hyperthermia Group of Lille (France) concerning the utilization of the microwave radiometry for the temperature control in hyperthermia therapy. This technique of noninvasive temperature control within the biological tissues has been integrated on many hyperthermia systems now commercialized, We describe the principle of a new radiometer as well as the calculation of radiometric signals. They allow a noninvasive determination of thermal maps inside tissues during the hyperthermia treatments. Many comparisons between theory and experiment have validated our models of thermal dosimetry whose provide a quantitative guidance for the planning of hyperthermia treatments.

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