Abstracts

Design and Modeling Using the FDTD Method of a New Generation of Applicators Realized from Coaxial Antennas for Microwave Hyperthermia

D. Despretz, J.C. Camart, J. Pribetich and M. Chive. "Design and Modeling Using the FDTD Method of a New Generation of Applicators Realized from Coaxial Antennas for Microwave Hyperthermia." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 1105-1108.

An increased interest in the application of the electromagnetic techniques for intracavitary thermotherapy treatments has been observed for treatment of prostate gland. This paper describes a new generation of applicators designed for this endocavitary thermotherapy. The applicators are realized from coaxial antennas associated with a water cooling system. The electromagnetic modeling is achieved by the FDTD. This method allow to determine the tissues volume which will be heated at the therapeutic temperature level. The possibility to increase the heated volume (by using simultaneously the urethral and rectal applicators) is clearly focused by theoretical results obtained from the bioheat transfer equation solution which are presented and confirmed by experimental measurements on a polyacrylamide phantom.

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