Abstracts

Interstitial Equal-Phased Arrays for EM Hyperthermia

P.F. Turner. "Interstitial Equal-Phased Arrays for EM Hyperthermia." 1986 Transactions on Microwave Theory and Techniques 34.5 (May 1986 [T-MTT] (Special Issue on Phased Arrays for Hyperthermia Treatment of Cancer)): 572-578.

Microwave radiating antenna arrays frequently have been inserted directly into cancerous tumors to heat directly and destroy the tumor cells. Example heating patterns are shown with a simple antenna design. An improved design is also described and power absorption patterns are calculated by a three-dimensional numerical model. This model is used to show effects of frequency and applicator design on the power pattern. The numerical model is also applied to show an improved power pattern with a synchronous (equal-phase) compared to a nonsynchronous array. The model shows that an increase in tip capacitance increases the heating at the tip.

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