Abstracts

Generation of a Highly Focused Electromagnetic Field in a Lossy Biological Medium by Controlling the Phase and Time Excitation of the Microwave Sources

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A focused electromagnetic field is generated in a layered cylindrical biological tissue model, by using a large number of concentrically placed waveguide applicators and pulsed signals of short pulse width, with a high frequency carrier. To this end, constructive phase interference and time coincidence of pulse modulated microwave signals principles are applied. Numerical results are computed and presented for a three-layer geometry, 20 cm in diameter, irradiated by an annular waveguide array, using 30 elements.

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