Abstracts

Field Analysis of Dielectric-Loaded Lens Applicator for Microwave Hyperthermia

P.H. Alexander and J. Liu. "Field Analysis of Dielectric-Loaded Lens Applicator for Microwave Hyperthermia." 1993 Transactions on Microwave Theory and Techniques 41.5 (May 1993 [T-MTT]): 792-796.

A dielectric-loaded waveguide applicator for microwave hyperthermia is analyzed. The phase constant in the waveguide is determined from the numerical solution of the characteristic equation. The field pattern in human muscle which is produced by the applicator is determined by using the Kirchhoff-Huygens principle. The field focusing effect is dependent on the properties of the low permittivity dielectric slab centered in the water-filled waveguide. The greatest field enhancement is found to occur when the slab is 75 mm wide for a 150 mm x 100 mm waveguide at 430 MHz.

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