Abstracts

Diathermy Applicators with Circular Aperture and Corrugated Flange (Short Paper)

M.A. Stuchly, S.S. Stuchly and G. Kantor. "Diathermy Applicators with Circular Aperture and Corrugated Flange (Short Paper)." 1980 Transactions on Microwave Theory and Techniques 28.3 (Mar. 1980 [T-MTT]): 267-271.

A design method and experimental results for a direct-contact circular aperture applicator are provided. The aperture is excited in the TE/sub 11/ mode; a corrugated flange surrounding the aperture improves the uniformity of the heating pattern and limits leakage. The performance of the applicators operating in the S band (2.45 GHz) and the X band (9.96 GHz) has been tested using a short monopole probe and a thermographic camera. The heating patterns obtained by the two methods are in agreement within the experimental errors. The applicators are suitable for clinical use, as they are lightweight and rugged, and capable of delivering a desired energy dose effectively, thanks to a relatively small standing-wave ratio (SWR < 2) and very low leakage.

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