Abstracts

A Gaussian-Beam Launcher for Microwave Exposure Studies (Short Papers)

P.S. Neelakantaswamy, K.K. Gupta and D.K. Banerjee. "A Gaussian-Beam Launcher for Microwave Exposure Studies (Short Papers)." 1977 Transactions on Microwave Theory and Techniques 25.5 (May 1977 [T-MTT]): 426-428.

A practical method of producing a focused-microwave exposure field in biological experiments, for selective partial-body irradiation, is described. The proposed structure consists of a dielectric sphere placed in front of, but displaced from, the open end of a corrugated pipe with quarter-wave teeth, carrying the HE/sub 11/ mode. It is shown that this launcher produces a near-circular Gaussian beam in the proximity of the dielectric sphere, with a high on-axis gain factor. Theoretical expressions are derived for the EM fields of the focused beam-wave, and experimental results obtained from a practical launcher confirm the theoretical calculations made.

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