Abstracts

Scattering of Microwaves by Dielectric Materials Used in Laboratory Animal Restrainers

J.C. Lin and C.-L. Wu. "Scattering of Microwaves by Dielectric Materials Used in Laboratory Animal Restrainers." 1976 Transactions on Microwave Theory and Techniques 24.4 (Apr. 1976 [T-MTT]): 219-223.

In most experimental investigations of the biological effects of microwave radiation, it is necessary to use low-loss dielectric materials for restraining animals under irradiation. Because of the complexity of the aualysis of the animal-restrainer combination, an analysis is made of the scattering of microwave fields by a simplified model of the restrainer with no animal present. The model chosen is that of a plane wave incident at an arbitrary angle upon a rectangular slab of finite width and thickness. Numerical results indicate that the scattered fields within a square region of one wavelength in distance from the slab surfaces are greatly enhanced and highly nonuniform. In particular, the maxima for parallel incidence exceed those for normal incidence by almost a factor of 2.

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