Abstracts

Microwave Absorption by Conductor-Loaded Dielectrics (Short Papers)

P.S. Neelakanta and J.C. Park. "Microwave Absorption by Conductor-Loaded Dielectrics (Short Papers)." 1995 Transactions on Microwave Theory and Techniques 43.6 (Jun. 1995 [T-MTT]): 1381-1383.

A theoretical model to predict the microwave absorption by a conductor-loaded dielectric is developed. The microwave power transmission coefficient of the test material is derived in terms of the effective conductivity and permittivity parameters (of the composite material) as a function of volume fraction of the conductor loading. The absorption transmission characteristics of the test material versus volume fraction of metal loading are described by three distinct regimes having low-loss, lossy, and metal-like characteristics. Theoretical predictions are comparable with the measured data pertinent to an iron-plus-dielectric material.

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