Abstracts

First-Order Theory for Oblate and Prolate Anisotropic Artificial Dielectrics

R.C.C. Leite and C.T. Tai. "First-Order Theory for Oblate and Prolate Anisotropic Artificial Dielectrics." 1964 Transactions on Microwave Theory and Techniques 12.1 (Jan. 1964 [T-MTT]): 117-122.

Equivalent expressions for the electric permittivity and magnetic permeability tensors of artificial dielectrics are derived. These are expressed as functions of particle dimension, shape and density and also as a function of the incident electromagnetic beam direction with respect to the orientation of the particle. Only the case of a uniform density of equally oriented particles is considered. The results are valid in first order for prolate and oblate spheroids. Spheres and disks are obtained as limiting cases.

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