Abstracts

Analysis of membrane support structures for integrated antenna usage on two-dimensional photonic-bandgap structures

A.L. Reynolds, H.M.H. Chong, I.G. Thayne, J.M. Arnold and P. De Maagt. "Analysis of membrane support structures for integrated antenna usage on two-dimensional photonic-bandgap structures." 2001 Transactions on Microwave Theory and Techniques 49.7 (Jul. 2001 [T-MTT]): 1254-1261.

The study of the transmission of electromagnetic waves through a photonic crystal with various membranes placed over the surface is presented in this paper. A difference in performance is observed even for a membrane thickness that is unable to support guided substrate modes through total internal reflection. The transmittance has been investigated for two crystal orientations, assuming normally incident external plane waves on a finite thickness two-dimensional (2-D) photonic crystals both with and without a membrane. The angular transmission response is characterized by scanning the incidence angle of the impinging plane wave to cover all available angles within the 2D periodic plane of the structure.

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