Abstracts

On the Surface-to-Bulk Mode Conversion of Rayleigh Waves (Short Papers)

C.-P. Chang and H.-S. Tuan. "On the Surface-to-Bulk Mode Conversion of Rayleigh Waves (Short Papers)." 1973 Transactions on Microwave Theory and Techniques 21.8 (Aug. 1973 [T-MTT]): 558-560.

The surface-to-bulk wave conversion phenomena occurring at a discontinuity characterized by a surface contour deformation may be used as a means for tapping Rayleigh waves in a nonpiezoelectric solid. For this purpose, the mode conversion problem is treated in this short paper with the use of a boundary perturbation technique. A systematic procedure is obtained to calculate not only the first-order scattered waves which include the reflected surface wave and the converted bulk wave, but also the higher order terms. With careful design of the surface contour, the converted bulk-wave power and the direction of propagation into the substrate may be controlled.

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