Abstracts

Variable Tunneling Excitation of Optical Surface Waves

J.H. Harris and R. Shubert. "Variable Tunneling Excitation of Optical Surface Waves." 1971 Transactions on Microwave Theory and Techniques 19.3 (Mar. 1971 [T-MTT]): 269-276.

A method for coupling an optical beam into thin films utilizing shaped tunneling regions is described. It is shown that in principle all of the power can be coupled into the film. For ease of fabrication, a uniform gradient structure is preferable, however, and yields coupling of over 90 percent for incident coherent Gaussian beams. Experimental coupling values with gradient tunneling regions are in excess of 50 percent. Good mode isolation and elimination of prism edge effects are major features of the coupler. The experimental coupling values are obtained from a transmission measurement utilizing two prisms.

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