Abstracts

Radiation Fields of a Tapered Film and a Novel Film-to-Fiber Coupler

P.K. Tien, G. Smolinsky and R.J. Martin. "Radiation Fields of a Tapered Film and a Novel Film-to-Fiber Coupler." 1975 Transactions on Microwave Theory and Techniques 23.1 (Jan. 1975 [T-MTT] (Special Issue on Integrated Optics and Optical Waveguides)): 79-85.

Light in a tapered thin-film optical waveguide radiates into the substrate because the waveguide mode in the taper becomes cut off. Our measurement of the radiation pattern shows that the light emerges from the taper as a narrow beam with an angular width of only 2°-4°. We have studied the problem based on ray optics and based on a wave theory of radiation modes. We also have demonstrated a film-to-fiber coupler in which an optical fiber collects all the light emerging from the taper.

❑ Return to main document.