Abstracts

A Laminar Slow-Wave Coupler and its Application to Iridium Antimonide (Correspondence)

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The purpose of this correspondence is to describe a technique for coupling energy between a waveguide mode and a semiconductor (or gas discharge) slow wave that has a longitudinal component of microwave electric field. When a bar of semiconductor material which supports such a wave is mounted as a central inductive post in dominant mode waveguide, the energy coupling occurs by way of the microwave electric field existing between the top and bottom waveguide surfaces. If the post is many wavelengths long (i.e., wavelengths of the slow wave within the semiconductor), the contributions from alternate half-wavelength sections of the post will cancel and the net coupling will result from the last full or fractional half-wavelength in the post. The post, viewed as a whole, is thus coupled very poorly to the waveguide.

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