Abstracts

A Generalized Two-Dimensional Coupled-Mode Analysis of Curved and Chirped Periodic Structures in Open Dielectric Waveguides (Sep. 1981 [T-MTT])

A generalized two-dimensional coupled mode analysis of curved and chirped quasi-periodic structures in planar dielectric waveguides has been formulated. This analysis can be used to design curved and chirped quasi-periodic stuctures for obtaining phase matched interaction between two specific guided-wave beams. Alternatively, it can be used to calculate the amplitude and the phase of the diffracted guided-wave beam for a given quasi-periodic structure and for a specific incident beam, including the effect of the phase mismatch. The numerical example of linear chirped grating lenses with F = 10, f = 20 mm, Lambda/sub min/ = 2μm, Lambda/sub max/ = 4.1μm, and grating grooved length = 65μm is presented.

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