Abstracts

Generalized analysis for a class of linear interferometric networks. Part II. Simulations

For pt.I see ibid., vol.46, no.10, pp.1399-408 (1998). In Part I of this paper, the author presented a method to simplify the analysis and design of interferometric microwave and optoelectronic networks such as filters, sensors, ring resonators, etc., comprised of 2/spl times/2 couplers, waveguides, reflectors, and mismatched interfaces. The simplification was achieved by introducing a generalized single-mode lumped-element 2/spl times/2 coupler with arbitrary coupling paths. In Part II, the author numerically examines a number of interferometric devices utilizing the analysis described in Part I. These devices include feedback-assisted couplers, multiple-ring resonators, unit transmittance circuits, add/drop filters, grating-assisted Mach-Zehnder (M-Z) interferometers, etc. Results are presented on the characteristics of the output and circulating wave in the resonant rings as a function of frequency, coupling coefficient, loss, and other component parameters. Results on group-delay characteristics are also given.

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