Abstract

This paper, deals with design and simulation of optical delay line consisting of an array of micro-ring resonator. The work comprises the comparison of three types of delay lines namely SCISSOR, CROW and Ring-loaded MZT interferometer based delay line. Loaded MZT interferometer configuration consists of array of micro-ring resonators connected to the upper arm. In SCISSOR configuration rings are cascaded serially and the light input at the bus waveguide is evanescently coupled to the ring waveguide. In CROW light input at the bus waveguide is coupled to the ring and is also coupled between the rings. In this paper comparison of the temporal parameters such as overall delay, group delay and also the spectral characteristics such as Free Spectral Range, loss and rejection line width are made. The delay achieved by this design is on the order of picoseconds which can be used in the OTDM networks for demultiplexing the channels and in Antenna Beam Forming networks.

References
Performance Analysis of Different Micro Ring Resonators based on Optical Delay Lines


Index Terms

Computer Science
Applied Sciences

Keywords

Micro ring resonator  Optical delay line