Optical beam shaping through SiN-based waveguide arrays towards WSS front-ends

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ABSTRACT

Wavelength Selective Switches (WSS) have emerged as the key elements in next generation reconfigurable optical add/drop multiplexed (ROADM) networks. Lately, on-chip beam transforming function is gaining traction for its use in WSSs as it can eliminate the need for precise alignment of complicated and expensive bulk optical components. So far, only monolithically integrated on a silica-based planar lightwave circuits (PLC) have been suggested for on-chip beam transforming in hybrid WSSs. In this work, we present an alternative design of an integrated beam transformer relying on SiN MMI-based frontend towards replacing traditional WSS front-end approaches.

Keywords: Optical Beam shaping, Waveguide Front-Ends, Photonic integrated circuits.