

Customization Process for Low-Loss Optical Multiplexers for Local Area Networks



Overview

We present a novel fabrication technique, enabling the creation of customized microscopic cavity mirror structures over a wide range of geometrical parameters, by combining focused ion beam milling (FIB) and CO₂ laser smoothing. In this paper, we design and experimentally demonstrate an eight-channel cascaded Mach-Zehnder interferometer (MZI) based Local Area Network (LAN) Wavelength Division Multiplexing (WDM) (de)multiplexer with channel spacing of 800 GHz on a silicon-on-insulator. Current solutions are limited by trade-offs between channel spacing, crosstalk, insertion. Fabry-Perot cavities are essential tools for applications like precision metrology, optomechanics and quantum technologies. The exploration of MDMUXs employing cascaded.



Article Content

Optical Wavelength-Division Multiplexing for Data Communication ...

Topics include service mapping using the generic framing procedure and virtual concatenation, technology for optical transceivers

Ultra-low-loss all-fiber orbital angular momentum mode-division ...

Mode-division multiplexers (MDMUXs) play a pivotal role in enabling the manipulation of an arbitrary optical state within few-mode

LWDM — Enablence

Enablence LAN Wavelength Division Multiplexing (LWDM) optical multiplexer (MUX) is available using our proprietary Vortex design.

Handbook Optical fibres, cables and systems

The simultaneous availability of compact sources and of low-loss optical fibres led to a worldwide effort for developing optical fibre

High-Performance Wavelength Division Multiplexers Enabled by Co ...

Here, we develop a novel design approach that co-optimizes inverse-designed wavelength division multiplexers and distributed

Low-Loss Cascaded Mach-Zehnder Multiplexer Integrated

Abstract: A 4×25 -Gb/s electroabsorption modulator integrated with a distributed feedback (DFB) laser (EADFB laser)

Optical Add/Drop Multiplexers Selection Guide: Types, Features ...

Optical Add/Drop Multiplexers (OADMs) are used in wavelength-division multiplexing systems for multiplexing and routing fiber optic

Compact Optical Transmitter Module with Integrated Optical

To support this trend, we have developed a 100Gbit/s compact optical transmitter module for CFP4 and integrated a compact low

Optimizing performance in elastic optical networks using advanced ...

Network operators diversify service offerings and enhance network efficiency by leveraging bandwidth-variable transceivers and

High-performance ultra-compact (de)multiplexer for simultaneous

This research provides a general design strategy for multifunctional on-chip photonic devices, which is anticipated to play a

Large-area low-loss fibers and advanced amplifiers for high-capacity ...

This paper reviews recent progress on ultra-large-area low-loss fibers for next-generation high-capacity terrestrial long

Free-standing microscale photonic lantern spatial mode (De

In this work we present the design, fabrication, and characterization of a 6-mode mixing, 375 μm long PL that enables

High-Performance Wavelength Division Multiplexers Enabled by Co ...

Abstract Wavelength division multiplexers are fundamental to the functioning and performance of integrated photonic circuits, with

Scalable, Low-Loss, Broadband Multimode Silicon Optical Switch

We propose and experimentally demonstrate a scalable, high-performance silicon multimode optical switch based on a robust

Optical networking

Optical networking is a means of communication that uses signals encoded in light to transmit information in various types of

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