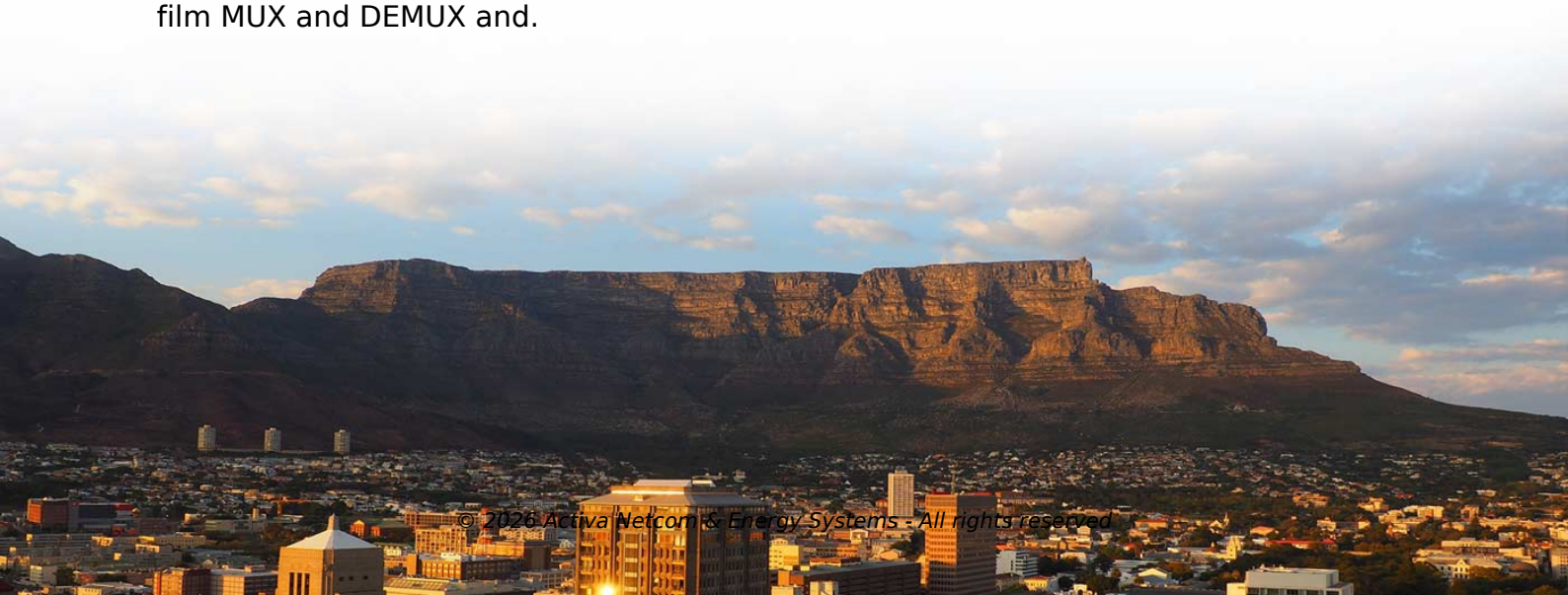
Activa Netcom & Energy Systems

OADM Based on FBG and Optical Circulator

Overview

In this paper, we demonstrate and analysis the OADM structures that exhibit low crosstalk even with multiple wavelengths. The OADM use a simple configuration of a 3 port Optical Circulator with FBGs, depending on the requirement of ADD or DROP channel. Optical-add-drop multiplexer (OADM) is the crucial components for the optical wavelength-divisionmulti-plexing (WDM) networks to add or dropvarious chan-nels at the optical nodes. A low-loss optical cir-culator has been developed to. Theoretical analysis and numerical simulation is carried out to evaluate the performance of an Optical Add-drop multiplexer (OADM) for Wavelength Division Multiplexing (WDM) transmission system in the presence of linear crosstalk due to Fiber Bragg Gratings (FBGs) and optical circulator (OC) which. As a key component for DWDM and UW-WDM (ultra wide wavelength division multiplexing) optical networks, OADM is used for selectively dropping and inserting optical signals into a transparent DWDM network. The FBG present a flat bandwidth and reflectivity in the order of 20 dB to 25 dB. Several wavelength OADM's have been proposed based on arrayed wave-guide gratings (AWG), Fabry-Perot filters, combination of dielectric thin film MUX and DEMUX and.



Article Content

Optical Add-Drop Multiplexer Based on Fiber Bragg Gratings for

A configurable optical add-drop multiplexer (OADM) based The basic architecture of the OADM node presented on fibre Bragg gratings is reported. Dynamically selection of consists of a FBG, an optical

Partially reconfigurable optical add-drop multiplexers for dense WDM ...

Abstract We propose a new partially reconfigurable add-drop multiplexer (OADM) that allows dropping several fixed wavelength channels and at least one tunable wavelength channel. It

Development of a Low-Loss Optical Circulator

This paper presents the fundamental principles of the optical circulator, and goes on to report on development of a marketable 3-port optical circulator that achieves low loss by optimizing losses

(PDF) A bidirectional optical add-drop multiplexer with gain using ...

IEEE Photonics Technology Letters, 2001 We propose and demonstrate three new optical add-drop multiplexer (OADM) architectures with simple and compact configuration and excellent crosstalk

OADM (Optical Add-Drop Multiplexer) Introduction

While configuring an OADM with FBG, the wavelength-multiplexed signals enter an FBG through a circulator, where only one arbitrary signal wavelength is reflected

Performance Analysis of FBG-Circulator Based OADM in Presence of ...

Wavelength division multiplexing (WDM) is an efficient method where several channels are transmitted through a single optical fiber. But performance of WDM system degraded due to the imperfections of

Tunable transparent and cost effective optical add-drop multiplexer ...

A wavelength tunable optical add drop multiplexer (OADM), giving access to all the wavelengths of the WDM signals provides more flexibility to satisfy reconfiguration requirements and to enhance network

ANALYSIS OF OPTICAL-ADD-DROP MULTIPLEXER USING FIBER

In this paper, we have demonstrated an experimental analysis for the generations of a OADM and its archi-tecture based on FBG. The experiment of OADM is performed on Light Runner fiber optica Setup.

Development of a Low-Loss Optical Circulator

The ABSTRACT optical circulator is one of the key devices in the optical add-drop modules (OADMs) used in wavelength-division multiplexing (WDM) technology, which finds applications in large

4-Channel Reconfigurable CWDM OADM Based on FBG Gratings

Abstract1— We have assembled and demonstrated the operation of a 4-channel OADM using large bandwidth fiber Bragg gratings for application in CWDM networks. The FBG present a flat bandwidth

MEMS switch based serial reconfigurable OADM

In this paper, a serial-type dynamic OADM based on 2 × 2 MEMS optical switch, tunable FBG and optical circulator (OC) is reported. It is insensitive to polarization and bit-rate. The structure

Performance Analysis of FBG-Circulator Based OADM in Presence of ...

In this article we analyzed the coherent crosstalk of FBG-Circulator based OADM with respect to power penalty, bit error rate (BER), and photo current and analytical models also have developed.

Fiber Bragg grating

A fiber Bragg grating (FBG) is a type of distributed Bragg reflector constructed in a short segment of optical fiber that reflects particular wavelengths of light and

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Many types of OADMs have been demonstrated based on different optical devices. These devices include arrayed-waveguide grating multiplexers, Mach–Zehnder interferometers with fiber Bragg

Reconfigurable multichannel optical add-drop multiplexers

References (7) Abstract We propose and demonstrate two new strictly nonblocking reconfigurable multichannel optical add-drop multiplexers (RM-OADMs) using optical circulators and

Mach–Zehnder fiber-grating-based fixed and ...

Compared with the OADM using FBG sandwiched between a pair of optical circulators in 9, 10, lower loss, lower cost, and allowable higher input power are expected in the MZ-FBG, because it

Optical Circulator

An optical circulator is another device that is based on the nonreciprocal polarization of an optical signal by Faraday effect. A basic optical circulator is a three-terminal device as illustrated in Figure 3.5.26,

ANALYSIS AND TESTING OF A NOVEL OADM BASED ON FBG

ABSTRACT: A novel optical add-drop multiplexer (OADM) based on the Mach-Zelauler interferometer (MZI) and the fiber Bragg grating (FBG) is proposed for the first tittle to the authors '' knowledge. In

Athermally packaged fiber Bragg grating for sensor and DWDM ...

Additionally, they are employed in manufacturing FBG-stabilized laser sources , Dense wavelength division multiplexing (DWDM) multiplexers, demultiplexers, and optical add–drop

Optical Circulator

OADM OADM is based on one FBG and two optical circulators. 4 channels, depicted as 4 colours, impinge onto an FBG via an optical circulator. The FBG is set to one

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