

Dual-wavelength fiber grating



Overview

This work designed a dual-wavelength 2D fiber Bragg grating (FBG) engraved on the single-mode fiber to measure the temperature and strain. Experiments showed that the temperature and. Abstract—We describe a novel and high performance dual polarization and dual wavelength band waveguide grating coupler which can be fabricated by deep UV photolithography. INTRODUCTION Waveguide grating couplers (WGC) are a commonly used approach in silicon photonics for fiber-chip interfaces. By incorporating an inline filter based on a polarization-diversified loop structure composed of two fiber Bragg gratings (FBGs) with different resonant wavelengths and three quarter-wave plates (QWPs), we propose a dual-wavelength FBG laser that can independently control the output polarization of. We show how dual wavelength differential detection can be used to measure fiber Bragg grating sensors using nanosecond pulses from a single DFB laser diode, by taking advantage of its dynamic chirp.



Article Content

Mar 24, 2026

Long Period Fibre Gratings

1. Introduction In essence, a long period fibre grating (LPFG) is an all-fibre device with wavelength dependent loss. As a band rejection filter, all light in a spectral slice is discarded without affecting the

Jul 28, 2025

Dual-Wavelength Differential Detection of Fiber Bragg Grating ...

We discuss how the dual-wavelength differential detection (DWDD) of fiber Bragg grating sensors can be used to build standardized high-resolution, high-accuracy, large-measurement

Oct 21, 2025

Dual Wavelength Differential Detection of Fiber Bragg Grating Sensors ...

We show how dual wavelength differential detection can be used to measure fiber Bragg grating sensors using nanosecond pulses from a single DFB laser diode, by taking advantage of its dynamic chirp.

Mar 03, 2026

Ultra-narrowband dual-cavity Bragg grating ring resonator optical ...

An optical filter utilizing a dual-cavity Bragg grating ring resonator is proposed to achieve narrowband transmission, high selectivity, and low inser

May 14, 2026

Dual-wavelength fiber Bragg grating laser with independently ...

By incorporating an inline filter based on a polarization-diversified loop structure composed of two fiber Bragg gratings (FBGs) with different resonant wavelengths and three quarter

Feb 28, 2026

Switchable dual-wavelength fiber laser based on a phase-shifted fiber ...

A switchable dual-wavelength erbium-doped fiber laser is proposed and demonstrated. It is based on the finer filter effect of phase-shifted fiber Bragg grating (PSFBG), combining with the

May 25, 2026

Fiber Bragg Gratings

Fiber Bragg gratings are reflective structures in the core of an optical fiber with a periodic or aperiodic perturbation of the effective refractive index.

Apr 18, 2026

Dual-wavelength fiber Bragg grating laser with independently ...

For example, their reflection spectra chosen by the inline filter can be linear horizontally polarized at one Bragg wavelength and linear vertically polarized at the other Bragg wavelength, and

Sep 25, 2025

Ultranarrow dual-transmission-band fiber Bragg grating filter and its ...

A fiber Bragg grating filter with ultranarrow dual-transmission bands implemented using the equivalent phase shift technique is demonstrated. A fiber ring laser that incorporates a dual-transmission-band

Oct 01, 2025

Tunable dual-wavelength fiber laser based on a single fiber Bragg ...

We propose a simple dual-wavelength Er-doped fiber laser configuration based on a dual-wavelength fiber Bragg grating written on the splice joint between two different fibers for wavelength

Dec 13, 2025

High Performance Dual Polarization and Dual Wavelength

Abstract—We describe a novel and high performance dual polarization and dual wavelength band waveguide grating coupler which can be fabricated by deep UV photolithography.

Jan 09, 2026

Dual-Band Polarization-Independent Subwavelength Grating Coupler

Surface grating couplers are diffractive periodic structures that enable efficient coupling of light between optical fibers and planar waveguides. Conventional grating couplers have polarization

Oct 30, 2025

Optimization of Dual-Wavelength linear cavity Erbium-Doped fiber

There are few reports in the field of linear cavity dual-wavelength fiber lasers about the laser output characteristics when 3-dB fiber loop mirror (FLM) and Fiber Bragg grating (FBG) are

May 12, 2026

Switchable dual-wavelength Erbium-doped fiber ring laser with

We have experimentally shown wavelength mode switching in a dual-wavelength Erbium-doped single cavity fiber laser where the initial two wavelengths of 1 nm spacing are determined by

Apr 05, 2026

Tunable dual-wavelength fiber laser

A narrow-linewidth, tunable, dual-wavelength fiber laser operating at room temperature with each lasing wavelength in single-longitudinal-mode operation is demonstrated. A commercially

Mar 29, 2026

Simultaneous discrimination of strain and temperature using dual ...

The temperature sensitivity coefficients of the dual-gratings are consistent due to the gratings are written in the same one fiber. Moreover, the strain sensitivity coefficients can be

Aug 16, 2025

Wavelength conversion based on four-wave mixing in high-nonlinear ...

The dual-pump all-optical wavelength conversion based on a four-wave mixing (FWM) in a high-nonlinear dispersion shifted fiber (HNL-DSF) is demonstrated experimentally.

Apr 04, 2026

Dual Wavelength Differential Detection of Fiber Bragg

We show how dual wavelength differential detection can be used to measure fiber Bragg grating sensors using nanosecond pulses from a single DFB

Mar 11, 2026

Dual-Wavelength-Band Grating Coupler on 220-nm Silicon-on

We propose and design a novel dual-wavelength-band grating coupler on 220-nm-thick silicon-on-insulator and experimentally investigate its capability to couple two wavelength bands...

Sep 03, 2025

High-resolution temperature monitoring with fiber Bragg gratings

In this paper, we report an FBG temperature sensor based on the dual-wavelength differential detection method. In this technique, the reflection intensities of two wavelength pulse

Sep 25, 2025

Switchable and compact dual-wavelength random fiber laser based on ...

The single-dual-single wavelength switch by adjusting pump power. A switchable dual-wavelength random fiber laser (DW-RFL) with compact structure and a low-threshold is

Nov 23, 2025

A spatially non-overlapping dual-wavelength 2D FBG for the

This work designed a dual-wavelength 2D fiber Bragg grating (FBG) engraved on the single-mode fiber to measure the temperature and strain. The FBG is composed of two sub-gratings

Dec 15, 2025

Optimizing photonic device performance with tunable tilted dual-mode ...

Dual-mode tilted fiber Bragg gratings (TFBGs) have become pivotal in optical sensing applications due to their enhanced light coupling from the core fundamental mode to higher-order

May 03, 2026

High-Efficiency Unidirectional Dual-Wavelength-Band Grating Coupler ...

A unidirectional dual-wavelength-band grating coupler with one-dimensional (1D) subwavelength structures is proposed and experimentally demonstrated.

Oct 02, 2025

Fabrication of Dual-Wavelength Fiber Bragg Grating with

Abstract A method of fabricating dual-wavelength fiber Bragg grating with a uniform phase mask is demonstrated. Theoretical analysis and numerical simulation using Matrix method are given.

Jan 04, 2026

Switchable dual-wavelength erbium-doped fiber laser based on the ...

In this paper, a switchable, dual-wavelength erbium-doped fiber laser, based on the broadband filtering performance of a tapered long-period fiber grating, is experimentally demonstrated.

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