How is air pressure measured using fiber optic gratings

Overview

In this study, an optical fiber sensor for the simultaneous measurement of pressure and position based on a pair of fiber Bragg gratings (FBG) in a clamped beam is proposed. The FBG pair are pasted on.

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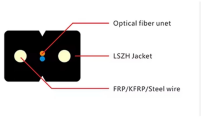
	In this paper, the fabrication method for tapered long-period fiber gratings, the sensing principle, the sensor structure, the measurement setup, and the preliminary results are presented and discussed.
	Exploring Fiber Bragg Gratings for High-Sensitivity Pressure Monitoring Applications
	In this report, we demonstrate the integration of FBGs into easy-to-fabricate microfluidic devices and report on their sensitivity for temperature and pressure measurement in microliter volumes.
	This paper presents the development and evaluation of four sensors based on multiple fiber Bragg grating (FBG) constellations embedded in a silicon dioxide single-mode fiber (SMF) for simultaneous ...
	This paper reports the measurement of the pressure of circular thin plate by an SMS optical fiber sensor, and the theoretical analysis and experimental verification are carried out.

FBG sensors are intrinsically sensitive to strain and temperature, but they have been used to measure a multitude of other parameters like pressure, displacement, acceleration, relative ...

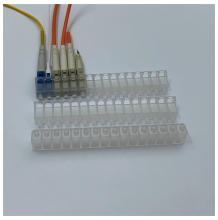
In this study, an optical fiber sensor for the simultaneous measurement of pressure and position based on a pair of fiber Bragg gratings (FBG) in a clamped beam is proposed.

Initially, the gratings were fabricated using a visible laser propagating along the fiber core. In 1989, Gerald Meltz and colleagues demonstrated the much more flexible transverse holographic inscription ...

Abstract: We propose and demonstrate a fiber-optic cascaded-cavity Fabry–Perot interferometer (FPI) for simultaneous measurement of air pressure and temperature.

This work was performed to investigate the feasibility of using Fiber Bragg Gratings (FBGs) strain sensor in detection of air pressure on aeroplane model known as Generic UTM Half-Model.

We demonstrate a novel, to the best of our knowledge, high-temperature pressure sensor based on a highly birefringent fiber Bragg grating (Hi-Bi FBG) fabricated in a dual side-hole ...

	We propose an air gap fiber Bragg grating (g-FBG) sensor that can measure strain and temperature simultaneously. The sensor is made by aligning two fiber Bragg gratings (FBGs), and an ...
	The air pressure is determined by calculating the Bragg wavelength shift caused by strain exerted on the gratings. This work is carried out to design an array of FBGs sensor to predict the pressure ...
	This paper presents the development and evaluation of four sensors based on multiple fiber Bragg grating (FBG) constellations embedded in a silicon dioxide ...

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