

Vibration Measurement with Fiber Optic Gratings



Overview

In this paper, we propose the use of a technique based on a sequential change in the wavelength of an optical radiation source, the preservation of FBG signals at different wavelengths recorded at different times, and the determination of vibration parameters based on such a. In this paper, we propose the use of a technique based on a sequential change in the wavelength of an optical radiation source, the preservation of FBG signals at different wavelengths recorded at different times, and the determination of vibration parameters based on such a. The work is devoted to the consideration of methods for determining the strain of objects using fiber Bragg gratings under a high-frequency vibration or pulsed mechanical action, which is difficult to perform using widespread methods and devices. The methods are based on numerical processing of the. Featured Application: Fiber sensor to measure vibrational frequency of civil structures. Abstract: Measuring vibrations is a common method of monitoring the integrity of structures and heavy machinery, that are subject to dynamic loads. The proposed technique offers the potential for simultaneous rotor speed and position monitoring. Especially, it can realize the high precision of the external parameters by means of the special structure design and the. 23 April 2017 High-speed vibration measurement by fiber Bragg gratings with Fourier domain mode locking laser You will have access to both the presentation and article (if available). To access this item, please sign in to.

Article Content

Oct 27, 2025

Fiber optic mechanical vibration sensor

Abstract. A novel cantilever-type fiber Bragg grating (FBG) mechanical vibration sensor has been proposed with an excellent sensitivity through the use of the mechanical axial property of a ...

Oct 18, 2025

Simulation and Measurement of Strain Waveform under Vibration ...

The work is devoted to the consideration of methods for determining the strain of objects using fiber Bragg gratings under a high-frequency vibration or pulsed mechanical action, which is difficult to ...

Jan 06, 2026

Design and analysis of high-frequency fiber Bragg grating vibration ...

The advantages of this structure in the first-order natural frequency and sensitivity as a fiber-optic vibration sensor are analyzed. The parameters and materials of the accelerometer are ...

Feb 21, 2026

Passively Conducted Vibration Sensing with Fiber Bragg Gratings

We present a sensor for measuring the vibrational frequencies on-site by placing the beam so that it makes physical contact with the vibrating body. The sensor has been tested in the range of 50–200 Hz.

Oct 07, 2025

Vibration measurement of electrical machines using integrated ...

In this paper a method to track the rotating force vector set up within the air-gap of radial flux rotating electrical machines using fibre Bragg gratings is reported. The proposed technique offers the ...

Aug 10, 2025

Design of Vibration Sensor Based on Fiber Bragg Grating

In this paper, a fiber grating vibration sensor which is suitable for vibration monitoring in key areas is designed based on the technical background of vibration monitoring system.

Jul 27, 2025

Dual Fiber Bragg Grating Sensor for Vibration Measurement in High ...

Here, we propose a high-temperature two-parameter fiber Bragg grating (FBG) sensor for monitoring temperature and vibration signals simultaneously. Two sets of cascaded gratings are written onto a ...

Jan 13, 2026

High-Precision distributed fiber optic vibration positioning system ...

The novelty of this study lies in the integration of incoherent light sources, grating arrays, and pulse coding techniques within a distributed fiber sensing system to detect strain and vibration.

Jul 05, 2026

Simulation and Measurement of Strain Waveform under Vibration ...

The results of measuring gradient strain fields by embedded or mounted point fiber-optic sensors based on Bragg gratings and distributed fiber-optic sensors based on Rayleigh scattering...

May 18, 2026

High-speed vibration measurement by fiber Bragg gratings with ...

We developed a high-speed wavelength-swept laser prototype using Fourier domain mode locking (FDML) and a reflection wavelength measuring system that could rapidly measure a fiber Bragg ...

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town,
7441, South Africa

This document is for informational purposes only. Specifications subject to
change without notice.

