Experiment with Fiber Optic Sensor Velocity Measurement Combination

Overview

This paper describes optical fiber-based velocity measurement in the velocity range of approximately 0–7 m/s with an error of approximately 10% compared to a hot wire anemometer and a new method for simultaneous temperature and velocity measurements. Applicability to velocity distribution. We put forward a new fiber optic sensor for measuring linear velocity with picometer/second sensitivity with Weak-value amplification based on generalized Sagnac effect [Phys. The generalized Sagnac effect was first introduced by Yao et al, which included the. A new flow measuring technique is introduced to measure liquid flow velocities under harsh circumstances in environments with dirt, high pressures and elevated temperatures as in boreholes within the earth's crust. A glass fiber embedded in a cable with heating wires measures the temperature within. This Letter presents and demonstrates an optical fiber vector sensor for simultaneous measurement of seawater velocity and direction, which is based on two reflective Panda fiber polarization interferometers orthogonally pasted on a hollow cylindrical cantilever.

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Article Content

An Integrated Interferometric Fiber Optic Sensor Using a 638 nm ...

An integrated interferometric fiber optic velocimetry sensor has been proposed and demonstrated at the central wavelength of 638 nm. The sensor is based on the principle of two laser

Optical fiber sensing method for simultaneous

This Letter presents and demonstrates an optical fiber vector sensor for simultaneous measurement of seawater velocity and direction, which is based

The design of a new fiber optic sensor for measuring linear velocity ...

Given the maximum incident intensity of the initial spectrum, the detection limit of the intensity of the spectrometer, we can theoretically give the appropriate pre-selection, post-selection,

Fiber-Optic Vibration Sensor Based on Multimode Fiber

Abstract and Figures The purpose of this paper is to present a fiberoptic vibration sensor based on the monitoring of the mode distribution in a

A Novel Fiber Optic Sensor for Microparticle Velocity

We report a microparticle velocity sensor with a conical lens fiber array. The conical lens fibers are linearly arrayed at the same interval to behave

Highly spatially resolved velocity measurements of a ...

Velocity measurements with a high spatial resolution are important in turbulent flow research. In this paper, we report on the development of a new fiber-optic laser-Doppler velocity

Research on high sensitivity optical fiber sensing method for ...

The optical fiber sensor based on the cantilever is expected to play an important role in the field of ocean flow field measurement because of high sensitivity and the ability to measure velocity

Development of Measurement Method for Temperature and Velocity

This paper describes optical fiber-based velocity measurement in the velocity range of approximately 0–7 m/s with an error of approximately 10% compared to a hot wire anemometer and

Laser Doppler velocimetry based on multi-core fiber

The main work includes:1. Simulation and analysis of double-beam interference fringes based on MCF; 2. Construct a laser doppler velocimetry system based on MCF, and verify the

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An Integrated Interferometric Fiber Optic Sensor Using a

Three velocity measurement experiments are carried out to measure the velocity, and the experimental data shows that the velocity increases linearly

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Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

All-Fiber Configuration Laser Self-Mixing Doppler

In this paper, a novel velocimeter based on laser self-mixing Doppler technology has been developed for speed measurement. The laser employed in

Determination of flow velocities using fiber-optic ...

Abstract A new flow measuring technique is introduced to measure liquid flow velocities under harsh circumstances in environments with dirt, high pressures and elevated temperatures as in boreholes

Pulse Wave Velocity Measurement With Multiplexed Fiber Optic Fabry ...

The paper presents an approach to noninvasively measure pulse wave delay and velocity by means of two multiplexed fiber-optic Fabry-Perot interferometric sensors interrogated by means of spectral

Optical fiber sensor for water velocity measurement in rivers ...

As a result, there has been growing interest in the develop-ment and application of fiber optic sensors for water velocity measurement.

The design of a new fiber optic sensor for measuring linear velocity ...

We put forward a new fiber optic sensor for measuring linear velocity with picometer/second sensitivity with weak-value amplification based on generalized Sagnac effect

Method for simultaneous measurement of velocity and direction of fluid ...

This article presents a fiber-optic method for measuring the velocity of a liquid flow, taking into account the flow direction. The proposed method is based on the use of an optical fiber with an

Development of Measurement Method for Temperature and Velocity

The developed optical fiber sensor demonstrated the ability to acquire a transient velocity profile in airflow experiments with high repeatability and accuracy.

Fiber Optic Confocal Sensor for Probing Position,

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Abstract We describe a fiber optic confocal sensor (FOCOS) system which uses an optical fiber and a lens to accurately detect the position of an object at, or close to, the image plane of the ...

Advanced optical measurement techniques for simultaneous fibre

A new measuring method is presented that allows time-resolved quasi-simultaneous measurement of fibre orientation and flow velocity of a transparent fluid such as a substitute fluid for...

Fiber-optic quantum gyroscope based on Hong-Ou-Mandel

Abstract Hong-Ou-Mandel (HOM) interferometry with quantum states has emerged a crucial tool for precision measurement system. Here, a novel scheme for angular velocity

(PDF) Wavelength-modulated fiber optic sensor for high

A reflective intensity-modulated fiber-optic sensor based on microelectromechanical systems (MEMS) for pressure measurements is

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