Activa Netcom & Energy Systems

Magnetic Resonance Fiber Optic Temperature Sensor

Overview

A high-sensitivity surface plasmon resonance (SPR) dual-parameter sensor based on photonic crystal fiber (PCF) is proposed for simultaneous measurement of magnetic field and temperature. OSENSA offers single and multi-channel fiber temperature probes for MRI (magnetic resonance imaging), NMR (nuclear magnetic resonance imaging), and RF (radio frequency) environments, including low-cost disposable temperature probes with fast-response and exceptional accuracy. Life sciences rely on. High accuracy and repeatable optical temperature sensors for your needs. The grooves on the right and upper sides of the PCF, serving as distinct detection channels, are filled with. However, increasing the sensitivity has encountered challenges due to the intrinsic temperature-dependent energy level shift, i., temperature responsivity, being limited to -74 kHz/K.

Article Content

Surface plasmon resonance fiber sensor based on magnetofluid for ...

This study presents a magnetofluid-coated surface plasmon resonance (SPR) fiber sensor based on hollow-core fiber (HCF), enabling simultaneous monitoring of magnetic field and temperature.

A Temperature Self-Compensating Fiber-Optic Fabry–Perot Sensor

A parallel Fabry-Perot interferometers (FPIs) fiber-optic sensor based on magnetic fluid (MF) and Vernier effect is proposed. The proposed sensor consists of two parallel FPIs, fabricated by

A Magnetic Resonance-Compatible Fiberoptic Temperature Sensor

This work evaluated a fiberoptic probe that meets all features and qualities that render it highly suitable for validating magnetic resonance temperature imaging measurements for magnetic resonance

Highly sensitive fiber sensor for detecting magnetic field ...

In this article, an integrated optical fiber sensor is designed and experimentally demonstrated for simultaneous measurement of magnetic field, displacement, and temperature.

A temperature self-compensating fiber-optic magnetic field sensor

The sensors could produce a reduced Vernier effect with temperature changes, achieving temperature self-compensation. A temperature self-compensating fiber-optic magnetic field sensor

Temperature-compensated magnetic field sensor based on ...

A temperature-compensated magnetic field sensor based on a hollow core Bragg fiber (HCBF) Fabry-Perot interferometer (FPI) is proposed. The two ends of the HCBF are fused with

Highly Sensitive Optical Fiber Sensor for Magnetic Field and ...

A dual-parameter fiber-optic sensor achieving synchronous detection of magnetic field strength and ambient temperature was engineered through synergistic coupling between surface plasmon

Coreless Optical Fiber Sensor Based on Surface Plasmon Resonance

Conventional sensors for magnetic field and temperature are based on the resistance change in electrical components such as magneto-transistors, magneto-resistors, and thermistors , .

High sensitivity fiber optic temperature sensor composed of two ...

A high-sensitive fiber-optic Fabry–Perot sensor with parallel polymer-air cavities based on Vernier effect for simultaneous measurement of pressure and temperature.

An Optical Fiber-Based Surface Plasmon Resonance Sensor for ...

In this article, a surface plasmon resonance (SPR) sensor was designed based on the no-core optical fiber (NCF) for the simultaneous measurement of magnetic field intensity and ambient

Surface plasmon resonance magnetic field sensor composed of the

Surface plasmon resonance (SPR), which is highly sensitive to microscopic changes in environmental refractive indexes, has attracted widespread attention in the field of environmental

Dual-channel temperature-compensated vector magnetic field sensor

Abstract Fiber-optic magnetic field sensors based on magnetic fluid (MF) is encountering with thermal effects and demand for vectorization for several years. A common solution is to use

ARF Dual-Channel Magnetic Field and Temperature Sensor Based

An anti-resonant fiber (ARF) surface plasmon resonance (SPR) dual-parameter sensor is designed for simultaneous detection of the magnetic field and temperature. Both sides of the fiber

Dual-Parameter Fiber Optic Sensor for Pressure and Temperature

This study presents a miniaturized fiber-optic sensing device that concurrently leverages Fabry-Pérot (FP) interference and anti-resonant (AR) guidance within a structure combining hollow

Coreless Optical Fiber Sensor Based on Surface Plasmon Resonance

A dual-parameter sensor based on a coreless optical fiber (CF) is designed for the simultaneous detection of magnetic fields (H) and temperature (T). The side of the CF is polished to form a double

Highly sensitive wide detection range bias core slot ...

This study presents a semicircular convex groove bias core photonic crystal fiber (PCF) sensor based on surface plasmon resonance (SPR) for high-precision temperature and refractive

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