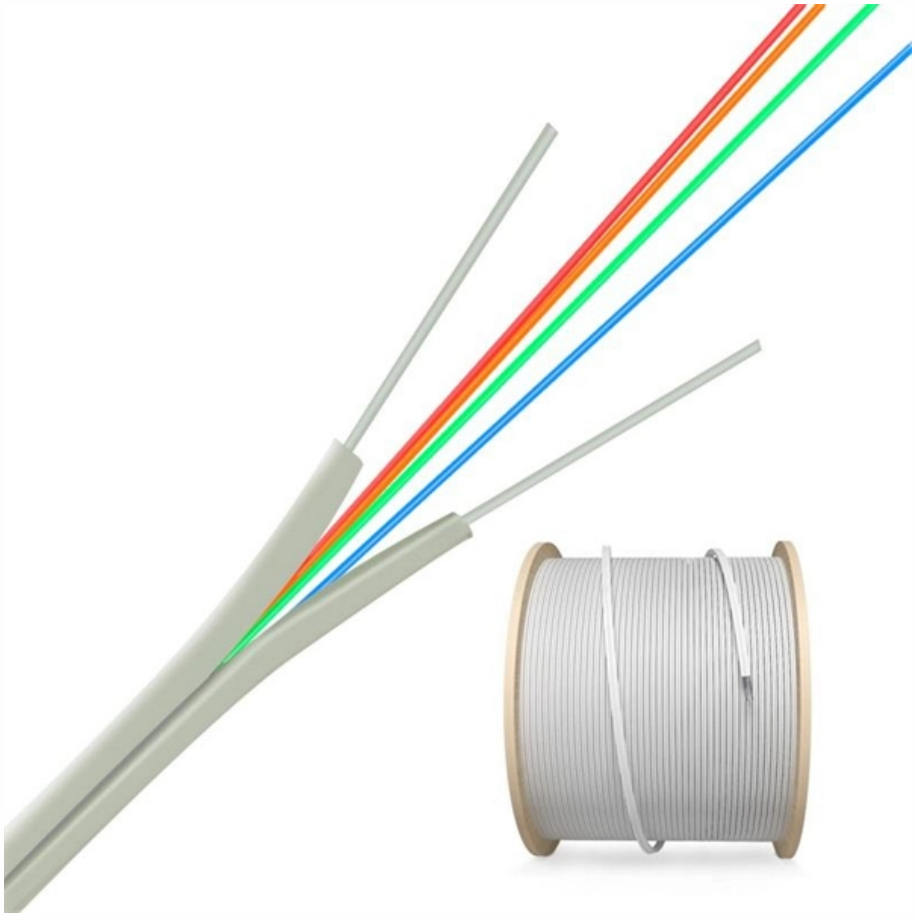
EIT Opto-Routing

All-fiber current interaction sensor



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Overview

All-fiber optic current sensors (AFCSs) are mainly based on the Faraday effects in the coil of an optical fiber around a current conductor and have attracted significant interest in recent years owing to their immunity to compact design, fast response time, electromagnetic. We have experimentally developed a hybrid-structure multi-channel all-fiber current sensor with ordinary silica fiber using fiber loop architecture. According to the rationale of time division multiplexing, the sensor combines parallel and serial structures. The current-induced rotation angle is converted into a minute change in transmittance of the fiber loop, which.

High-current-sensitivity all-fiber current sensor based on fiber loop

In this paper, we demonstrate a novel all-fiber current sensor using ordinary silica fiber. The sensor employs a fiber solenoid as a current sensor head, which improves the current sensitivity

Fiber-optics multiplexed interferometric current sensors

We propose two types of fiber-optics multiplexed interferometric sensor to monitor electrical currents of the power systems on different situations. With different operating frequencies,

Current sensor based on inline microfiber Mach-Zehnder interferometer

Here, all fiber miniaturized micro Mach-Zehnder interferometer (MMZI) current sensor is fabricated by concatenating two fiber tapers (of waist diameters ~19 μm and ~21 μm, respectively

(PDF) All fiber optical sensor of electrical current with a

The current sensor is realized on the base of the all-fiber low-coherent reflection interferometer. An Erbium-doped fiber superfluorescent radiation source

Hybrid Structure Multichannel All-Fiber Current Sensor

We have experimentally developed a hybrid-structure multi-channel all-fiber current sensor with ordinary silica fiber using fiber loop architecture.

Development of a novel high-frequency reciprocal structure fiber

A novel all-fiber optic current sensor (FOCS) is designed specifically for the measurement of large transient currents based on the Faraday effect.

Recent Progress of All Fiber Optic Current Transformers

All fiber optic current sensors can overcome the shortcomings of traditional electromagnetic current transformer in volume, weight, safety, environmental protection, dynamic range and so on. It has

Hybrid Structure Multichannel All-Fiber Current Sensor

We have experimentally developed a hybrid-structure multi-channel all-fiber current sensor with ordinary silica fiber using fiber loop architecture. According to the rationale of time division multiplexing, the

A Loop All-Fiber Current Sensor Based on Single

In order to solve the two problems, a novel AFCS combining single-polarization single-mode (SPSM) couplers and a loop structure is presented in

High-current-sensitivity all-fiber current sensor based on fiber loop

Abstract In this paper, we demonstrate a novel all-fiber current sensor using ordinary silica fiber. The sensor employs a fiber solenoid as a current sensor head, which improves the

Sensory interactive fibers and textiles , npj Flexible Electronics

To promote the practical application and better development of sensory interactive e-textiles, this paper reviews the research status of sensory interactive fibers and textiles in recent

Optical fiber current sensor research: review and outlook

Optical fiber current sensor (OFCS) based on Faraday magneto-optic effect has many advantages of immunity against electromagnetic interference, high sensitivity and wide dynamic

(PDF) A highly accurate All-Fiber MMZI current sensor

The proposed device is simple and suitable for applications in optical communications systems, fiber lasers, and optical fiber sensors for the monitoring

A Highly Accurate All-Fiber MMZI Current Sensor

Earlier reported micro-Mach-Zehnder interferometer (MMZI) sensors, fabricated by concatenation of tapered fibers, considered the interference between LP01 and LP02 modes only for

Recent Progress of All Fiber Optic Current

Transformers

This paper discusses the research status of all fiber optic current sensors at home and abroad, introduces the basic working principle and the evolution process of optical structure, emphatically

Hybrid fiber-optic DC current sensor using parallel MZI-FPI

This study presents a hybrid fiber-optic DC current sensor integrating parallel Mach-Zehnder (MZI) and Fabry-Perot (FPI) interferometers, experimentally validated for enhanced

Temperature stability analysis of the all-fiber current sensor with a

A novel loop structure AFOCS with a coupled fiber polarization rotator (FPR) is introduced

in this paper. The operating principle of this structure is theoretically analyzed, and the Jones matrix is used to

Research on All-Fiber Dual-Modulation Optic Current Sensor Based

We present a method to simultaneously measure the temperature and electric current, which can be applied for the all-fiber optic current sensor (AFOCS) temperature compensation. The Faraday

Hybrid fiber-optic DC current sensor using parallel MZI-FPI

This study presents a hybrid fiber-optic DC current sensor integrating parallel Mach-Zehnder (MZI) and Fabry-Perot (FPI) interferometers, experimentally validated for enhanced sensitivity.

All fiber optic current sensor based on phase-shift fiber

An all fiber optic current sensor (AFOCS) utilizing ordinary optical fiber is proposed and demonstrated, which is implemented with a phase-shift fiber

All fiber optic current sensor based on phase-shift fiber

An all fiber optic current sensor (AFOCS) utilizing ordinary optical fiber is proposed and demonstrated, which is implemented with a phase-shift fiber loop ringdown

Adaptive All-Fiber Actuator for Human-Environment Interaction

RequestPDF,AdaptiveAll-FiberActuatorforHuman-EnvironmentInteraction,Aclosed-loop pathway of "efficient actuation-synchronous sensing-multimodal feedback" is crucial for

All-fiber optical sensor of electrical current with a SPUN

The all-fiber optic current sensor is applied to realize the measurement of the leakage current of ships. The analytical model is established in a two

Temperature-Robust All-Fiber Demodulation of Optical Current Sensor

By incorporating a long-period fiber grating (LPFG) inscribed on birefringent photonic crystal fiber (BPCF) with a CO2 laser as a polarization analyzer, we demonstrate temperature-robust all-fiber

(PDF) An all-fiber current sensor based on magnetic

All-fiber magnetic-field sensor based on a device consisting of a microfiber knot resonator and magnetic fluid is proposed for the first time in this

An all-fiber current sensor based on magnetic fluid clad microfiber

Abstract--A novel optical current sensor based on microfiber knot resonator (MKR) with magnetic fluid (MF) as cladding is proposed and demonstrated in this paper. The operating principles,

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