

# Polarization-maintaining fiber optic temperature sensing



## Overview

**Abstract:** A high-sensitivity all-fiber temperature sensor based on a Sagnac interferometer is demonstrated by splicing a section of polarization maintaining fiber (PMF) between two sections of standard single mode fibers (SMFs). A D-shaped polarization-maintaining fiber (PMF) as fiber optic sensor for the simultaneous monitoring of strain and the surrounding temperature is presented. A mechanical end and edge polishing system with aluminum oxide polishing film is utilized to perform sequential polishing on one side. An optical fiber ring laser (FRL) cavity-based sensitive temperature and salinity sensor is proposed and experimentally demonstrated. In this sensor, the SMF-PMF-SMF structure in the Sagnac loop is bent. Polarization-maintaining (PM) fiber is engineered to preserve the state of polarization (SOP) of light as it propagates, making it a foundational component in high-performance photonic systems.

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A novel, simultaneous strain and temperature sensor utilizing polarization maintaining fiber (PMF) and multimode fiber (MMF) is proposed and ...



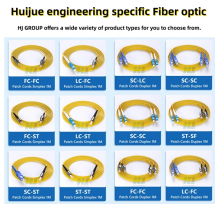



In this paper, a fiber-optic refractive index and temperature sensor based on Mach-Zehnder interferometer (MZI) is designed and fabricated. The sensor structure consists of a section ...



An optical fiber ring laser (FRL) cavity-based sensitive temperature and salinity sensor is proposed and experimentally demonstrated. The sensor consists of a Sagnac loop with a waist of 15 ...



PDF | An optical fiber ring laser (FRL) cavity-based sensitive temperature and salinity sensor is proposed and experimentally demonstrated.

 <p>Huijue engineering specific Fiber optic HJ GROUP offers a wide variety of product types for you to choose from.</p>	<p>This paper proposes a laser temperature sensor based on polarization maintaining fiber (PMF) and few-mode fiber (FMF), and conducted their experimental studies.</p>
	<p>A novel, simultaneous strain and temperature sensor utilizing polarization maintaining fiber (PMF) and multimode fiber (MMF) is proposed and experimentally demonstrated in this paper.</p>
	<p>A macehead-shaped bent polarization-maintaining fiber-based interferometric sensing structure called MBPIS is described and experimentally demonstrated for precise temperature and ...</p>
	<p>In practical terms, PM fiber reduces polarization drift caused by environmental perturbations such as temperature variation, mechanical stress, and vibration—issues that can ...</p>

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