

Polarization-maintaining fiber interferometry structure

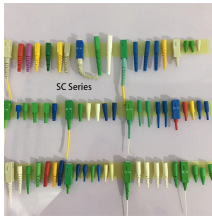


Overview

The polarization-maintaining fiber (PMF) is sandwiched with two graded-index multimode fibers (GI MMF), which form the Mach-Zehnder interferometer (MZI) sensor. The results show that with the increase of displacement.

Abstract: A novel optical accelerometer based on Sagnac loop using high-birefringence polarization-maintaining photonic crystal fiber, was developed to improve the tradeoff between sensitivity and resonant frequency. Resonant frequency beyond 2,300 Hz and sensitivity of 29 pm/g were demonstrated. To simultaneously optimize two inherently conflicting performance metrics, namely, birefringence and confinement loss, a multi objective genetic algorithm is.

Polarization-maintaining fiber interferometry structure



Polarization-maintaining fibers and their applications are reviewed. The classification of high-birefringent fibers and low-birefringent fibers and their fabrication methods and characteristics are discussed in ...



The polarization-maintaining property of a tapered PMF is examined by distributed group birefringence along the tapered PMF with a spatial resolution of ~ 1.25 cm and a polarization-extinction ratio at the ...



When the cores of two polarization-maintaining optical fibers are close enough (usually within a few microns), the light field transmitted in one optical fiber will penetrate into the other optical fiber in the ...



A macehead-shaped bent polarization-maintaining fiber-based interferometric sensing structure called MBPIS is described and experimentally demonstrated for precise temperature and ...



According to the principles of optical coherence domain polarimeter (OCDP) technique, the test scheme is analyzed and presented to measure the ER of LiNbO₃ polarizer with its apparatus ...



This work presents a novel polarization-maintaining hollow-core anti-resonant fiber design featuring a nested semicircular dual-ring structure and optimized through a multi-objective ...



When the cores of two polarization-maintaining optical fibers are close enough (usually within a few microns), the light field transmitted in one optical fiber will ...



A displacement sensor based on polarization-maintaining fiber has been proposed and proved in experiment. The polarization-maintaining fiber (PMF) is sandwiched with two graded-index ...



Polarization-maintaining fibers work by intentionally introducing a systematic linear birefringence in the fiber, so that there are two well defined polarization modes which propagate along the fiber with very ...



A novel optical fiber accelerometer based on Sagnac interferometer constructed with a 0.35-m long polarization-maintaining microstructured optical fiber and a 3-dB coupler was successfully ...



Polarization-maintaining fibers are applied in devices where the polarization state cannot be allowed to drift, e.g. as a result of temperature changes. Examples are fiber interferometers, fiber-optic ...

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