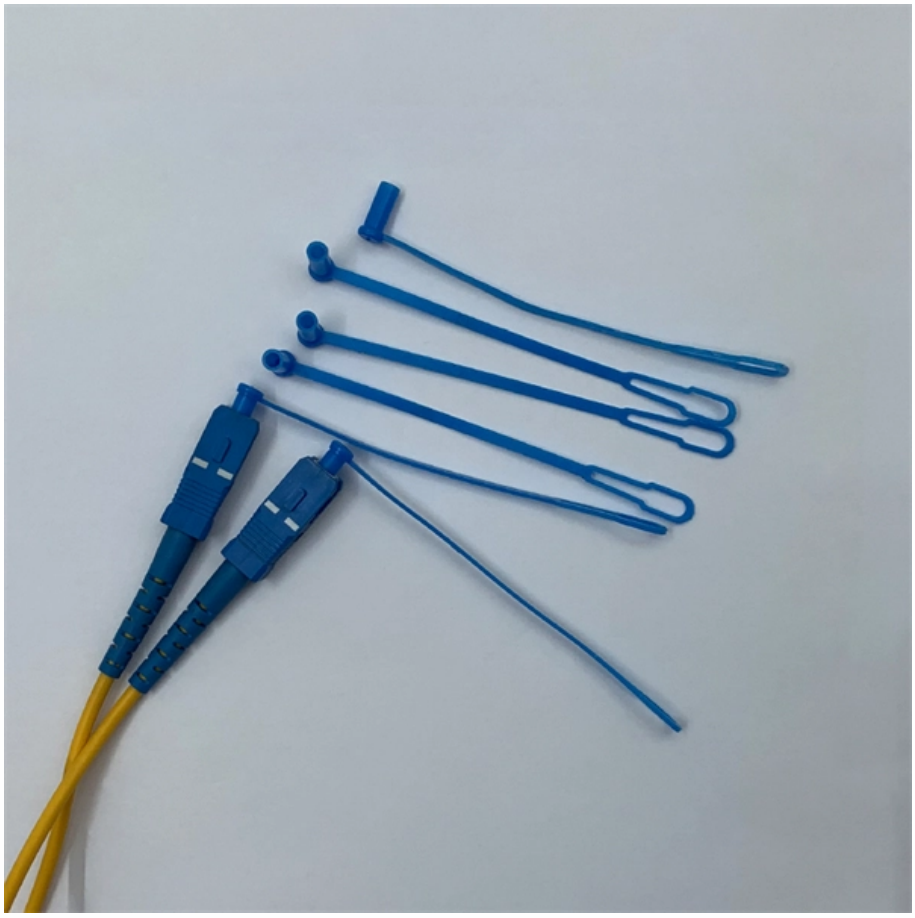
Adam Tas Corridor Energy

PDMS Fiber Optic Sensor Packaging



Overview

The packaging proposed in this work is made of PDMS with a microarray adhesive structure on one of the surfaces. In addition, a polyamide (PI) capillary is placed in the middle of the packaging, where the FBG sensor is inserte. The axial period of the grating defines a resonance wavelength, known as Bragg wavelength, for which incoming light is reflected in phase, while all other wavelengths are transmitted through. To better analyse the strain reduction process, simulations through a three-dimensional finite element method (3D-FEM) are first prese.

PDMS Fiber Optic Sensor Packaging

Study by simulation and realization of a fiber optic pressure sensor

The fabrication of the fiber optic low-pressure sensor involves the deposition of a PDMS membrane on a m-cavity created at the end of an optical fiber. The sensor's detectivity hinges on the dimensions of

PDMS-based liquid-core optical fiber fluorescence pressure sensor

However, these sensors often suffer from complex manufacturing processes and high costs. To address these challenges, we propose an innovative approach utilizing a

A Lossless Fiber Pressure Sensor Based on PDMS

In this paper, a lossless fiber pressure sensor based on a structure composed of two ratios of the polydimethylsiloxane (PDMS) and single-mode fiber is proposed. The PDMS has often been used as

Polydimethylsiloxane based soft polymer optical fibers: From the

Moulding and dip coating processes were developed for the production of

Polydimethylsiloxane (PDMS) based polymer optical fibres (POFs). Mechanical and optical

Micro-Nano Fiber Pressure Sensor based on PDMS packaging

Semantic Scholar extracted view of "Micro-Nano Fiber Pressure Sensor based on PDMS packaging microfiber knot for Pulse Wave Monitoring" by Weihong Chen et al.

High sensitivity temperature sensor based on a PDMS

Thus, optical fiber devices with novel structure or assisted by functional materials are studied and adopted to improve the sensitivity. In 2017, a ring-core optical fiber sensor with

A Lossless Fiber Pressure Sensor Based on PDMS

ABSTRACT Fiber optic pressure sensors have been widely used in recent decades. Most of the ber optic pressure sensors use ber gratings and Fabry-Perot cavity. However, they have the drawbacks

Gecko-inspired self-adhesive packaging for strain-free

Besides offering protection, the PDMS packaging with an embedded polyamide capillary damps the mechanical strain transferred to the optical fibre, providing FBG-based temperature

An Optimized PDMS Thin Film Immersed Fabry-Perot

To effectively control the critical thickness of a polydimethylsiloxane (PDMS) film and enhance the sensitivity characteristics of the fiber pressure

Self-Adhesive Polydimethylsiloxane (PDMS)-Packaged Fiber Bragg

A polydimethylsiloxane packaging for fiber Bragg gratings is proposed to mitigate strain transfer and provide self-adhesion to structures. Using no glue, results show strong adhesion of the packaging

Investigation on fabrication and VOC sensing properties of PDMS fiber

An optical fiber VOC gas sensor based on PDMS fibers is proposed, which utilizes the adsorption properties of PDMS fibers to detect VOC gases. Experimental results show that the

Research on OFDR Pressure Sensor Based on PDMS

The optical fiber pressure sensor based on PDMS material drives the optical fiber to produce strain through the deformation produced by the PDMS material and establishes a stable

Fiber-optic temperature sensor coated with PDMS thermo-gel film

In this work, we propose a fiber-optic temperature sensor based on single-mode fiber (SMF) -multi-mode fiber (MMF)-etched dispersion compensating fiber (DCF)-single-mode fiber SMF

Optical fiber ultrasonic sensor based on partial filling PDMS in hollow

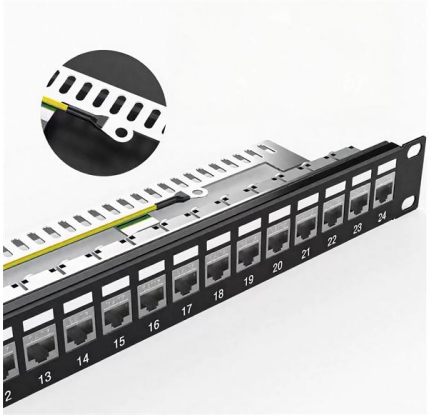
At the same time, mechanical package structures were diffusely utilized to protect the sensor heads for most optical fiber FPI based ultrasonic sensors, increasing complexity of the

High-resolution optical fiber underwater acoustic sensor enhanced by

Abstract This study introduces a high-resolution optical fiber underwater acoustic sensor utilizing a Fabry-Perot (FP) interferometer design. The sensor consists of a single-mode fiber (SMF)

A PDMS Film Structured Optical fiber Ultrasonic Sensor

The optical fiber FP ultrasonic sensor with PDMS film structure proposed in this paper has obvious advantages in improving sensitivity and

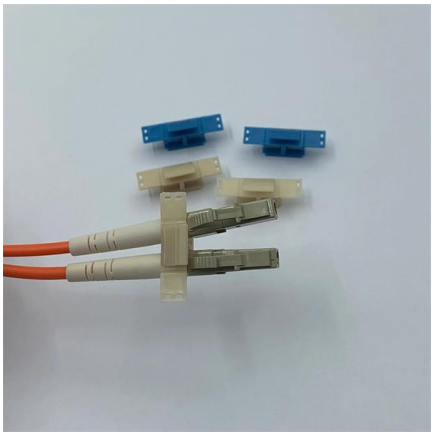


Polydimethylsiloxane containing gold nanoparticles for optical

In this work, we report on different dispersion effects of gold nanoparticles in PDMS. The surface morphology was investigated by atomic force microscopy (AFM) and wetting ability analyses.

Micro-Nano Fiber Pressure Sensor based on PDMS packaging

Request PDF , On Dec 1, 2025, Weihong Chen and others published Micro-Nano Fiber Pressure Sensor based on PDMS packaging microfiber knot for Pulse Wave Monitoring , Find, read and cite all the



Polydimethylsiloxane based soft polymer optical fibers: From the

Abstract Polydimethylsiloxane (PDMS) based soft polymer optical fibers (POFs) have recently demonstrated their intriguing potential for different sensing applications like strain or

Microsphere-Augmented PDMS integration in tapered FBG small

In this work, a new design for a high-sensitivity temperature FBG-based sensor is proposed and demonstrated. The sensor was fabricated by inscribing an FBG on a tapered optical

An Optimized PDMS Thin Film Immersed Fabry-Perot Fiber Optic

This method forms a new fiber-optic Fabry-Perot pressure sensor that is very sensitive to external pressure parameters.

A review paper on fiber-optic sensors and application of PDMS

Fiber optic sensing technology is one of the fastest growing technologies in the modern day science. Optical fiber sensors draw more and more interests of researchers and application

Study by simulation and realization of a fiber optic pressure sensor

Fiber optic pressure sensors operate on various interferometric principles, such as amplitude modulation and polarization variation. In this study, we have developed and implemented

PDMS-based packaging: (a) process flow and (b)

PDMS-based packaging: (a) process flow and (b) fabricated sensor part. The photodetector is isolated from the external environment, because it is inserted

(PDF) Gecko-inspired self-adhesive packaging for strain-free

Here, a polydimethylsiloxane (PDMS) packaging with a microarray structure that provides gecko-inspired dry adhesion is proposed for strain-free FBG-based temperature sensing.

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