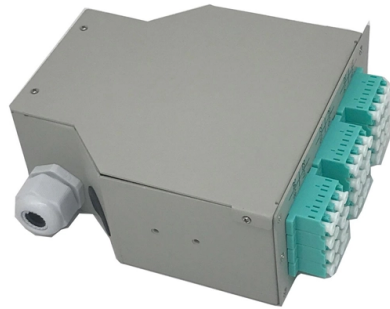


Fiber Optic Humidity Sensor Production



Overview

Humidity sensitive materials of polymethyl methacrylate (PMMA), polyvinyl alcohol (PVA), and polyethylene glycol (PEG) film have been elaborated via a dip-coating and withdrawal technique, enabling the development of three distinct FPI-based fiber optic humidity sensors. Optical fiber humidity sensors (OFHSs) offer several advantages over electronic humidity sensors such as miniature design, durability, the possibility of working on flammable environments and at higher temperature and pressure ranges, and, most important, their electromagnetic immunity. Therefore, Renato Faraco Filho, João Gabriel de Carvalho, Luiz David Silva, Enzo Dantas da Silva, Sinei Gonçalves Júnior, Flávio Augusto Marques, Alexandre Cotta, Alexandre Bessa dos Santos, Jonas Henrique Osório and Jefferson E. Tsuchida Principle, Application, and Advancement of Temperature and Humidity. The Fabry-Pérot interferometer (FPI) structure has been designed and fabricated through the heterogeneous splicing of single-mode fiber to hollow-core fiber, coupled with precision length cutting. When standard electrical sensors or glass fiber sensing are too rigid, too fragile or too exposed to drift, SHUTE helps you build a smarter.



Article Content

Oct 16, 2025

Optical fiber humidity sensor based on a tapered fiber coated with ...

An optical fiber humidity sensor (OFHS) has been fabricated using a hydrophilic gel (agarose) deposited on the

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Development of fabrication technique and sensing performance of optical ...

The control and measurement of humidity are closely related to the daily-life of human. The accurate measurement of

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Development of fabrication technique and sensing performance of

Several key principles are classified and introduced, as well as the sensing performance of different types of sensors

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Fibre-optic sensor technologies for humidity and moisture

A review of the use of fibre-optic sensor technologies for humidity sensing is presented. The paper first provides a

Sep 16, 2025

Highly Sensitive Optical Fiber Humidity Sensor Employing SiO

This letter describes the development and characterization of an optical fiber humidity sensor employing intensity

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Highly Sensitive Optical Fiber Sensor for Humidity Measurement

The development of a highly sensitive optical fiber humidity sensor for Relative humidity measurement (RH) is described in this

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High-sensitivity MMI optical fiber humidity sensor based on SMCS

Abstract This paper presents an optical fiber sensor (OFS) based on an enhanced multimode interference (MMI) effect

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Development of Fabrication Technique and Sensing Performance of

In recent decades, with the emergence and development of fiber optic sensing technology, optical-fiber-based humidity

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Optical fibre-based sensor technology for humidity and moisture ...

A representative variety of optical fibre-based sensing techniques available to perform the measurement of humidity

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Fiber Optics Technology for Temperature and Humidity Sensor

This chapter reviews optical fiber sensors designed for measuring temperature and humidity, covering their

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In this article, we introduce a multi-channel fiber optic dew and humidity sensor which works using a novel method

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A highly sensitive humidity sensor based on open cavity fiber Fabry-Perot interferometer (FPI) with double-sided contact film is

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Fiber optic integrated FPI sensor for simultaneous measurement of ...

Mounting researches have recently been devoted to the novel fiber optic humidity sensors. These sensors are

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The present paper developed the dual point humidity measuring sensor by using a polymer optical fiber (POF) based

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SHUTE Sensing Solutions

SHUTE solution: Polymer optical fiber humidity sensing integrated into selected production environments, enclosures, chambers or

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Optical fiber humidity sensor based on the vernier effect of the Fabry ...

Abstract In this paper, a relative humidity (RH) sensor based on vernier effect of two parallel Fabry-Perot

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All-fiber temperature and humidity sensor based on photopolymer and ...

Abstract The ability to monitor temperature and humidity simultaneously is critical for biomedical and industrial

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Optical fibre-based sensor technology for humidity and moisture ...

An optical fiber relative humidity (RH) sensor is proposed and experimentally demonstrated with a multimode-fiber

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Catalyzing Commercialization: Tiny Optical Fiber Sensors Offer

For commercial applications, fiber optic humidity sensors can be wall-mounted and used for measuring the humidity inside the

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A Study of Relative Humidity Fiber-Optic Sensors

In this paper, the performances of the three coating materials used with tapered fibers to construct humidity sensors

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Miniature and high-performance optical fiber relative humidity sensor ...

Abstract A miniature Fabry-Perot fiber-optic sensor is demonstrated for high-performance relative humidity (RH)

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Recent Developments in Fiber Optics Humidity Sensors

Sensors based on optical fibers present several advantages over electronic sensors and great research efforts have

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Metal Oxide Coated Optical Fiber for Humidity Sensing Application: A ...

Along with the mentioned optical fiber structures, their fabrication process, equipment required for humidity sensing and the coating

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Optical Fiber Interferometric Humidity Sensor by Using Hollow Core ...

An optical fiber Fabry-Perot interferometer (FPI) is constructed for relative humidity measurement by fusion splicing a

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