Fiber Optic Sensing Patents

Article Overview

Fiber optic sensing patents are actively evolving, with recent innovations in distributed sensing, downhole monitoring, and low-cost acoustic detection, reflecting a growing focus on industrial, telecommunication, and energy applications.

Overview of Recent Patents

Fiber optic sensing patents cover a wide range of technologies, including distributed acoustic sensing (DAS), distributed temperature and strain sensing (DTS/DSS), and discrete sensing using fiber Bragg gratings (FBGs). Recent applications focus on improving accuracy, cost-efficiency, and adaptability in complex environments. For example, EXFO filed a patent for a DAS method using low-cost coherent lasers and independent processing of DAS traces to reduce sensitivity to laser fluctuations, enabling cost-effective monitoring of optical fiber networks . Another recent U.S. patent application describes a fiber optic communication and sensing (FOCS) system that integrates measurement and communication signals via wavelength division multiplexers, enabling downhole monitoring of boreholes for hydrocarbons or CO_2 storage. This system supports distributed temperature, strain, and acoustic sensing along the fiber, providing high-resolution, real-time data while minimizing downhole electronics .

Key Technologies and Trends

• Distributed Fiber Optic Sensing: Patents increasingly focus on continuous sensing along the fiber length, using optical time-domain reflectometry (OTDR) to assign measurements to specific positions. This allows monitoring of temperature, strain, pressure, and acoustic signals in real time ....

Article Content

US8116601B2

Fiber optic shape sensing Abstract A shape sensing system to determine the position and orientation of one link with respect to

EP2867626B1

This application relates to fibre optic sensing, such as fibre optic distributed acoustic sensing, with detection/monitoring

GB202108396D0

G01D5/32 Mechanical means for transferring the output of a sensing member; Means for converting the output of a sensing member

Fibre optic sensing

This application relates to methods and apparatus for distributed fibre optic sensing. The apparatus includes an optical arrangement

Fiber Optic Sensor

This paper reviews the fiber optic sensors that have been developed and applied to measure cable forces, including fiber Bragg

Fiber-optical sensor array for sensing and imaging

Mixed sensor array devices are provided herein. Mixed sensor arrays as described herein include acoustic energy generating

Optical Fiber Sensors and Sensing Networks: Overview of the Main ...

Therefore, the integration of optical fiber sensors in WSNs introduces benefits and new capabilities for the design of advanced hybrid

US11668873B2

Optical fiber sensors Abstract A fiber optic sensing device includes an optical fiber having a polished end defining a flat sensory

US5900215A

A method is provided for manufacturing a fiber optic sensor for detecting or measuring a parameter of interest in a sample fluid,

120 results about "Fibre optic sensors" patented technology

Patsnap Eureka AI that helps you search prior art, draft patents, and assess FTO risks, powered by patent and scientific literature

GB2621779A

This application describes methods and apparatus for fibre optic sensing. A receive unit (102) includes an optical arrangement

Method and system for high sensitivity in distributed fiber sensing ...

Distributed fiber sensing system including a laser source, a circulator, a detector and an optical fiber, the circulator

Fiber Optic Sensors: Short Review and Applications

An extensive review of optical fiber sensors and the most beneficial applications is presented in this chapter. Although

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This page includes the patent name, patent number, legal status, invention/applicant, technical efficacy and accompanying drawings

US7781724B2

Fiber optic position and shape sensing device and method relating thereto Abstract The present invention is directed toward a fiber

Fiber Optic Sensing Association (FOSA)

Fiber optic sensing is used around the world to monitor smart infrastructure, including tunnels, railways, bridges, borders, power

Fiber optic sensor patented technology retrieval search results ...

A fiber-optic sensor is a sensor that uses optical fiber either as the sensing element ("intrinsic sensors"), or as a means of relaying

Optical Fiber Sensing

Optical fiber sensing refers to the use of optical fibers to measure various parameters such as temperature, strain, and pressure by

What is Fiber Optic Sensing?

Learn how fiber optic sensing technology, including distributed acoustic sensing (DAS), distributed temperature sensing (DTS), and

Lightweight Fiber Optic Sensors for Real-Time Monitoring of ...

Innovators at NASA''s Armstrong Flight Research Center have developed a lightweight, robust fiber optic sensing system (FOSS) that

US20160377660A1

A fiber optic sensor and related method are described, with the sensor including a cross-coupling element in the optical path

NETL Patents Fiber Optic Sensor Technology for Hydrogen Leak

NETL researchers have been awarded a patent for a new fiber optic sensor designed to detect hydrogen (H2) leaks at storage

US9995628B1

A fiber optic sensor, a process for utilizing a fiber optic sensor, and a process for fabricating a fiber optic sensor are described, where

Optical fiber patented technology retrieval search results

This page includes the patent name, patent number, legal status, invention/applicant, technical efficacy and accompanying drawings

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