

# Patent for Temperature-Sensing Optical Cables



## Overview

patent application number 16/064201 was filed with the patent office on 2019-01-03 for fibre optic temperature measurement. The applicant listed for this patent is OPTASENSE HOLDINGS LIMITED. Invention is credited to Alastair Godfrey. A temperature sensor for measuring. U. A temperature sensor for measuring. There is provided a temperature sensor comprising: an optical fiber; and a sensing element spaced from the optical fiber; wherein the optical fiber is aligned with the sensing element to deliver a source beam to interact with the sensing element and detect a return beam, the return beam exhibiting. There is provided a temperature sensor comprising: an optical fiber; and a sensing element spaced from the optical fiber; wherein the optical fiber is aligned with the sensing element to deliver a source beam to interact with the sensing element and detect a return beam, the return beam exhibiting. Superior modern temperature sensors rely on a resistance measurement of a loose, suspended bundle of platinum wires that is sensitive to humidity and vulnerable to strain induced by mechanical shock. That results in a drift in resistance that requires frequent, time-consuming and costly. Our Optical Networking & Sensing department develops new optics and photonics patents spanning the Internet backbone to the home. Fibre optic sensing is a known technique where an optical fibre, deployed in an area of interest as a sensing fibre, is interrogated with interrogating radiation and radiation which emerges from the fibre is detected and analysed to determine properties of the environment in which the sensing. Smart Summary: High voltage (HV) equipment uses special optical fibers to monitor temperature.

## Article Content

### Fibre Optic Temperature Measurement Patent Application

U.S. patent application number 16/064201 was filed with the patent office on 2019-01-03 for fibre optic temperature measurement. The applicant listed for this patent is OPTASENSE HOLDINGS LIMITED.

### Application of Distributed Optical Fiber Temperature Measurement in ...

This paper studies a distributed optical fiber temperature measurement system using smart cables, which combines fiber Bragg grating arrays and multi-core communication fibers for monitoring high

### (PDF) Optical fiber temperature sensor design

The temperature difference between the incoming light source at one end of the fiber optic cable and the temperature of the sensor will cause a

### U.S. Patent Application for Fiber Optic Temperature Sensor Patent ...

Fiber optic temperature sensors, such as temperature probes, normally include an optical fiber which can deliver light to a sensing material (e.g., phosphor). The light illuminates the phosphor which, in

### OFDR DISTRIBUTED TEMPERATURE AND STRAIN MEASUREMENTS WITH OPTICAL

Optical fibre distributed temperature measurements were then successfully compared to thermocouple reference measurements, whereas optical sensing cable data were processed to provide distributed

### Linear Heat Detection Cables (Fiber Optic) | ATP Solutions

Fiber optic sensor cables can be used not only for data transmission, but also for measuring temperature, strain, and acoustic signals, even in harsh environments. AP Sensing's Distributed

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### IIoT-Based Applications for Sensing Temperature with Optical Fiber

Unlike traditional electrical temperature-measurement devices such as thermocouples and RTDs, the entire length of the fiber-optic cable acts as a temperature sensor. Distributed temperature sensing

### Optical Fiber Application for Temperature Monitoring of Cable Line ...

The article considers the possibility of measuring the temperature of cable transmission lines with the help of specially manufactured narrowed quartz optical fiber. The study of technological processes of

U.S. Patent Application for Fiber Optic Temperature Sensor Patent ...

This application is a continuation-in-part of U.S. patent application Ser. No. 16/442,420 filed on Jun. 14, 2019, the contents of which are incorporated herein by reference.

Application of distributed optical fiber temperature sensing technology ...

In order to monitor the safety of the whole cable in real time and effectively, this study introduces and adopts distributed optical fiber temperature sensing (DTS) technology as the method

Fiber Optic Sensing Cable in Industrial Environments

Fiber-sensing network types include point, quasi-distributed, and distributed. Sensing: A brief history It has been more than 50 years since the first patent was

Distributed temperature sensing

Distributed temperature sensing systems (DTS) are optoelectronic devices which measure temperatures by means of optical fibres functioning as linear sensors. Temperatures are recorded along the optical

Distributed Sensing Cables

Our distributed sensing cables provide optimized monitoring of your critical harsh environment infrastructure. Distributed sensing is a technology that enables

Optical Temperature Sensor | NIST

A droplet of hardened, transparent epoxy (center) connects a fiber optic array (top) to a photonic chip containing two temperature-sensing devices

Optical Fiber Sensors for High-Temperature Monitoring:

High-temperature measurements above 1000 °C are critical in harsh environments such as aerospace, metallurgy, fossil fuel, and power production.

(PDF) Distributed Temperature Sensing: Review of

Distributed temperature sensors (DTS) measure temperatures by means of optical fibers. Those optoelectronic devices provide a continuous profile

In-Depth Overview of Fiber Optic Temperature Sensors

A fiber optic temperature sensor is a temperature measurement device that uses optical fibers as the sensing medium. Unlike traditional electrical temperature

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A distributed optical fiber sensor for temperature detection in power ...

In this study, a distributed temperature sensing system based on the temperature-sensitive Raman scattering has been proposed for a 154 kV XLPE insulated power cable.

Fiber Optic Temperature Sensors: Types, Working

Explore the structure, working principles, advantages, and disadvantages of Fiber Optic Temperature Sensors for accurate temperature measurement in diverse

Tempsens

Tempsens specialises in thermal engineering solutions, which includes our 3 key verticals, Temperature sensing solutions, Electrical Heating Solutions and

A distributed optical fiber sensor for temperature detection in power ...

In this study, temperature detection in an XLPE insulated 154 kV power cable is performed using a distributed sensing method where the optical fiber itself behaves as a sensor.

USAGE OF OPTICAL FIBERS FOR TEMPERATURE MONITORING

U.S. Patent Application US20260133081A1 for the present disclosure relates to a high voltage (HV) equipment comprising HV element (s) configured to operate in a HV region, optical fiber (s) installed

Fiber Optic Temperature Sensing and Measurement | Luna

Fiber optic temperature sensors are immune to the many environmental effects that compromise other measurement technologies, can be embedded and installed in

Fiber Optic Temperature Sensing: Revolutionizing

However, traditional temperature sensors often have limitations, hindering the ability to obtain a comprehensive understanding of thermal profiles. Let's explore fiber

Fibre optic temperature measurement

An analyser (112) is configured to analyse the measurement signal, extract a thermal response signal corresponding to the thermal variation and compare the thermal response to a predetermined...

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