

Fiber Optic Sensors for Posture Monitoring





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Optical fiber sensors for posture monitoring, ulcer detection and

Download Citation , Optical fiber sensors for posture monitoring, ulcer detection and control in a wheelchair: a state-of-the-art , Background: In the last ten years, the design and

Optical fiber data glove for hand posture capture

In this paper, a low-cost data glove is designed based on intensity-modulated optical fiber deformation sensor and direction sensor, which can measure the angle of finger joints and the



Integrated Optical Fiber Force Myography Sensor as Pervasive

An optical fiber-based FMG sensor to recover hand posture was demonstrated in this work. The low cost and user mobility are the highlights of the proposed design, as the transducer of each channel

PRIME PubMed , Optical fiber sensors for posture monitoring, ulcer

In the last ten years, the design and implementation of Optical Fiber Sensors (OFS) in biomedical applications have been discussed, with a focus on different subareas, such as body

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Fusing the Wireless Technique Optical Fiber Force Sensor for Remote

This article presents a novel three-dimensional-printable optical fiber force sensor used to guide the rehabilitation of patients with heart failure (HF), and builds the corresponding sleeping posture

Real-Time Human Posture Recognition Using Embedded Optical Fiber

Smart wearable technology is highly popular in biomedical and kinesiology fields due to its lightweight, flexible, comfortable, and adaptive nature. A smart wearable knee pad was designed using a fiber



Dual-Function Wearable Hydrogel Optical Fiber for Monitoring Posture

In recent years, wearable devices have been widely used for human health monitoring. Such monitoring predominantly relies on the principles of optics and electronics. However, electronic

Optical fiber sensors for posture monitoring, ulcer

In the last ten years, the design and implementation of Optical Fiber Sensors (OFS) in biomedical applications have been discussed, with a focus on

Dual-Function Wearable Hydrogel Optical Fiber for



Monitoring Posture

Hence, a wearable, embedded asymmetric color-blocked optical fiber sensor based on a hydrogel has been developed. Its sensing principle is grounded in the total internal reflection within

Wearable Optical Fiber Sensors in Medical Monitoring

Wearable optical fiber sensors have great potential for development in medical monitoring. With the increasing demand for compactness, comfort,

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OFS have been used in several healthcare applications as well as postural and preventive applications. The literature showed an effort to implement and design accessible devices for people with



Real-Time Human Posture Recognition Using Embedded Optical

Real-Time Human Posture Recognition Using Embedded Optical Fiber Sensors and Machine Learning Publisher: IEEE PDF

High accuracy sitting posture monitoring enabled by multiplexing fiber

Abstract In this paper, we presents a microsphere-based fiber-optic sensor array designed for sitting posture monitoring. The sensor features a hollow-core fiber with silica walls forming an air



Polymer optical fiber for monitoring human physiological and body

Polymer optical fibers are made of polymer materials with attractive characteristics compared with silica fibers, such as low Young's modulus, high failure strain levels, high flexibility,

Optical fiber sensors for posture monitoring, ulcer

Physical characteristics of OFS, different uses, and applications of Polymer Optical Fiber pressure sensors are mentioned. The main postures used

Fiber Optical Sensors in Biomechanics

References (0) Cited by (8) Optical fiber sensors for posture monitoring, ulcer detection and control in a wheelchair: a state-of-the-art 2024, Disability and Rehabilitation Assistive Technology



High accuracy sitting posture monitoring enabled by multiplexing fiber

In this paper, we presents a microsphere-based fiber-optic sensor array designed for sitting posture monitoring. The sensor features a hollow-core fiber with silica walls forming an air cavity, enabling

Optical fiber data glove for hand posture capture

In recent years, a new type of intensity-modulated optical fiber sensor with a sensitive zone has been developed, which can measure the bending deformation directly. In this paper, a low



Fusing the Wireless Technique Optical Fiber Force Sensor for Remote

Request PDF , Fusing the Wireless Technique Optical Fiber Force Sensor for Remote Monitoring of Sleeping Posture, This article presents a novel three-dimensional-printable optical fiber

A machine learning-integrated multi-channel flexible optical fiber

Traditional single-sensor systems face inherent limitations in achieving high-accuracy motion monitoring with low latency, particularly under complex dynamic conditions. To overcome

Design and Manufacturing of Polymer Optical Fiber (POF) Pressure



This work presents a low-cost system based on Polymer Optical Fiber pressure sensors fabricated in a 3D structure for user posture monitoring in a wheelchair. The sensor was characterized by tensile

Optical fiber sensors for posture monitoring, ulcer detection and

Background: In the last ten years, the design and implementation of Optical Fiber Sensors (OFS) in biomedical applications have been discussed, with a focus on different subareas, such as

Sensor-Based Wearable Systems for Monitoring Human

In recent years, marked progress has been made in wearable technology for human motion and posture recognition in the areas of assisted



Intelligent fiber optic integrated sensing system for human motion

Therefore, the intelligent fiber optic integrated sensing system has great potential for applications in human motion detection, medical monitoring, and other fields.

Optical fiber sensors for posture monitoring, ulcer detection and

The development of a noninvasive optical fibersensor (OFS) architecture adaptable to a shoe sole for plantar pressure remote monitoring, suitable to be integrated in an IoT e-Health

Optical fiber sensors for posture monitoring, ulcer detection and



Results: The main applications of OFS in the rehabilitation field for preventing future postural diseases and applying them in device controllers were discussed in this review.

Wearable Optical Fiber Sensors for Biomechanical Measurement in

Optical fiber sensing has the advantages of lightweight, anti-electromagnetic interference, higher strain and elastic limit, safety, and dependableness. It has been significantly

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