High-elasticity fiber optic sensor

A simply designed, highly sensitive, stretchable, compact wearable, and skin-like optical fiber sensing instrument is designed and demonstrated for joint motion monitoring.

For applications such as human motion detection and soft robots that may involve large strains and deformations, flexible optical fiber sensors prepared with super-elastic elastomers are more suitable ...

To address the challenge of achieving a wide force measurement range and high sensitivity in most flexible sensors, a force-sensitive optical fiber sensor (FSOFS) is proposed based ...

Abstract: A high-sensitivity fiber-optic Fabry-Perot interferometer (FPI) based on a stainless steel diaphragm for acceleration detection is proposed. The sensitive element is mainly composed of an ...

In this work, we designed an integrable elastic fiber-optic tactile (IEFT) sensor using the principle of the photoelastic effect of the polarization maintaining fiber (PMF) capable of detecting the ...

The traditional electrical flexible tactile sensors have low sensitivity and are susceptible to electromagnetic interferences. In this paper, optical fiber and polydimethylsiloxane (PDMS) are ...

This flexible fiber optic pressure sensor can be developed via a simple fabrication process, has a low cost, and has high sensitivity, highlighting its potential applications in smart ...

Brief theory of sensing principle, fabrication method, applications, advantages and disadvantages of the different fiber-optic sensors, are addressed. ...

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The E3NX-FA amplifier is best choice for most challenging fiber applications in terms of long sensing distance, minute object detection or high speed processes.

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Distributed fiber-optic sensors have been used for monitoring mechanical deformations in stiff infrastructures such as bridges, roads, and buildings, but they either are limited to measuring one ...

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