Ofdr Fiber Optic Shape Sensing

This article presents a systematic evaluation of fiber-optic shape sensing models for prostate needle interventions using a single needle embedded with a three-fiber optical frequency ...

To address the challenges associated with shape sensing of continuum manipulators (CMs) using Fiber Bragg Grating (FBG) optical fibers, we present a unique shap

In optical fiber shape sensing technology, enhancing sensing accuracy while simultaneously achieving real-time shape reconstruction presents a notable challenge. This work ...

This paper introduces a novel shape-sensing approach for Concentric Tube Steerable Drilling Robots (CT-SDRs) based on Optical Frequency Domain Reflectometry (OFDR).

This study demonstrates a frequency-spatial division multiplexed optical frequency domain reflectometry (FSDM-OFDR) system that allows for parallel interrogation of simultaneous ...

In this paper, we propose a local spectrum matching method for optical fiber shape sensing in an OFDR system. Compared with the conventional cross ...

A highly accurate 3D shape sensing scheme based on special fiber OFDR is proposed and demonstrated. Combining with ICP algorithm, the maximum reconstruction error is effectively ...

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An optical frequency domain reflectometry (OFDR) shape sensor was demonstrated based on a femtosecond-laser-inscribed weak fiber Bragg grating (WFBG) array in a multicore fiber (MCF).

We present a twist compensated, high accuracy and dynamic fiber optic shape sensing based on phase demodulation in Optical Frequency Domain Reflectometry (OFDR) by using multiple ...

In this paper, we propose a local spectrum matching method for optical fiber shape sensing in an OFDR system. Compared with the conventional cross-correlation method, the ...

OFDR is an interferometric technique that was first developed as a way to measure optical fibers" reflectivity, and therefore detect losses or breaks in the fibers.

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