

Signal Processing of Fiber Optic Displacement Sensors

fiber based sensors are also presented in this chapter. The application of the FODSs in liquid refractive index measurement is investigated theoretically and experimentally. In the last part of this chapter, a ...

Table of Contents Electrical-domain readout: a new paradigm for fiber sensors The big idea here is to pull sensor information from the electrical signal produced by a photodetector, not the ...

This thesis reports the systematic study of the measured displacements using the Fotonic Sensor, the corresponding frequency components of the obtained displacement signals, and the approach to ...

Our paper begins by describing the mathematical model that underlies advanced sensor configurations. We then explain our method for designing the fiber bundles and critically analyze the ...

In this paper three different types of Intensity Fiber Optic Displacement Sensors (I-FODS) are presented. Three configurations of I-FODS were realized in two varieties.

A critical aspect of OFDS performance is the geometry of the fiber bundle, which influences key parameters such as sensitivity, range, and dead zones. In this work, we present a ...

With using a high performance He-Ne laser, low noise photodetectors, low drift operational amplifiers, 6-pole Butterworth filters and perfect digital signal processing circuits, a 0.005 nm displacement ...

Historically, fiber-optic sensors detecting environmental parameters like strain, temperature, and displacement have relied on monitoring changes in optical transmission spectra. ...

This article reviews specifically the advanced fiber optic displacement sensing techniques that have been developed in the past two decades.

Here, we present a comprehensive analytical model for multi-axis tilt sensing based on intensity-modulated optical fiber sensors (OFDSs).

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