Design an intensity fiber optic sensor

Overview

This study introduces a cost-effective solution and sensor arrays for the multipoint liquid-level measuring sensor based on an intensity modulation technique. The sensor structure is based on the twisting of two fibers and creates cascading to achieve a multipoint detection. A self-referencing, intensity-based fiber optic sensor (FOS) is proposed and demonstrated. The theoretical analysis for the proposed design is given, and the validity of the theoretical analysis is confirmed via experiments. A D-shape optical fiber sensor based on intensity modulation was used to show how well it can detect the concentration of a. Abstract: Compare with traditional way of numerical simulation by establishing the mathematical model through geometry optic, we design a TracePro model to analyze the sensing process of reflective intensity-modulated fiber optic sensor base on ray tracing. The aim of the SPIE Field Guides is to distill this information, providing readers with a handy desk or briefcase reference that provides basic, essential information about optical princi-ples, techniques, or phenomena, including definitions and descriptions, key.

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A self-referencing, intensity-based fiber optic sensor (FOS) is proposed and demonstrated. The theoretical analysis for the proposed design is given, and …

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The Design and Validation of an Intensity-Modulated …

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Self-referenced intensity-based fiber optic sensor system using fiber ...

Different from transmission type intensity-based sensors, a reflective type based on a pair of fiber Bragg gratings is introduced. To validate the proposed method, a transducer made by using an etched ...

Design of a low-cost D-shape optical fiber sensor based on intensity ...

A D-shape optical fiber sensor based on intensity modulation was used to show how well it can detect the concentration of a substance by measuring its refractive index.

Design of Intensity-Modulated Urodynamic Fiber-Optic Pressure ...

This paper proposes a plastic optical fiber pressure sensor design based on reflective intensity modulation. The theoretical foundation for this innovative structure is derived, followed by simulation ...

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