

Multi-channel fiber optic SPR sensor



Overview

Figure 1a shows the sketch diagram of one sub-channel of the proposed multi-channel SPR sensor and Fig. 1b shows its cross section, which is based on the side-polished single-mode fiber. Compared with the traditional three-layer structure SPR sensors, the proposed SPR sensor has an additional dielectric layer on top of gold film, allowing to flexib. The gold film is one of the key factors affecting the proposed SPR sensor, so we optimize the gold film thickness d_2 of the SPR sensor firstly. The thickness of the dielectric layer thickness d_3 is tentatively set to 500 nm. Figure 3 shows the SPR spectrum at a series of gold film thickness from 0 (without gold film) to 70 nm, with the interval of. The dielectric layer is the other one of the key factors affecting the proposed SPR sensor; here, we research the influence of the thickness of the dielectric layer on the spectrum of the SPR sensor. We simulate the SPR spectrum at a series of dielectric layer thicknesses d_3 from 0 to 1000 nm. Meanwhile, the gold film thickness d_2 keeps 50 nm. The.



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Abstract Fiber-optic surface plasmon resonance (SPR) sensors have been increasingly used due to their advantages such as compact size, stable physical and chemical properties, high

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Fiber optic sensors based on surface plasmon resonance (SPR) have demonstrated outstanding performance in biomedical, environmental monitoring, public safety, and other aspects, which

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Fiber-optic surface plasmon resonance (SPR) sensors have the advantages of high sensitivity and fast response. Traditional single-channel sensors cannot fulfill practical detection needs, while multi

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Abstract and Figures Surface plasmon resonance (SPR) based fiber optic sensor has been studied for multichannel and multianalyte sensing.

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Machine learning approach in multi-channel fiber-optic SPR sensors

In this paper, a dual-channel side-polished fiber-optic SPR sensor system is established to detect the refractive index of liquids and the liquid temperature.

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The realization methods and application status of the multi-channel fiber optic surface plasmon resonance sensors are reviewed.

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Novel concept of multi-channel fiber optic surface plasmon resonance sensor

A novel multi-channel fiber optic surface plasmon resonance (SPR) sensor is reported. The sensing structure consists of a single-mode optical fiber, covered with a thin gold layer, which

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Multichannel Fiber Optic SPR Sensors: Realization ...

This review thoroughly analyzes and compares the structure, excitation effect, sensing performance, and the advantages and disadvantages of each type of multichannel fiber optic SPR...

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