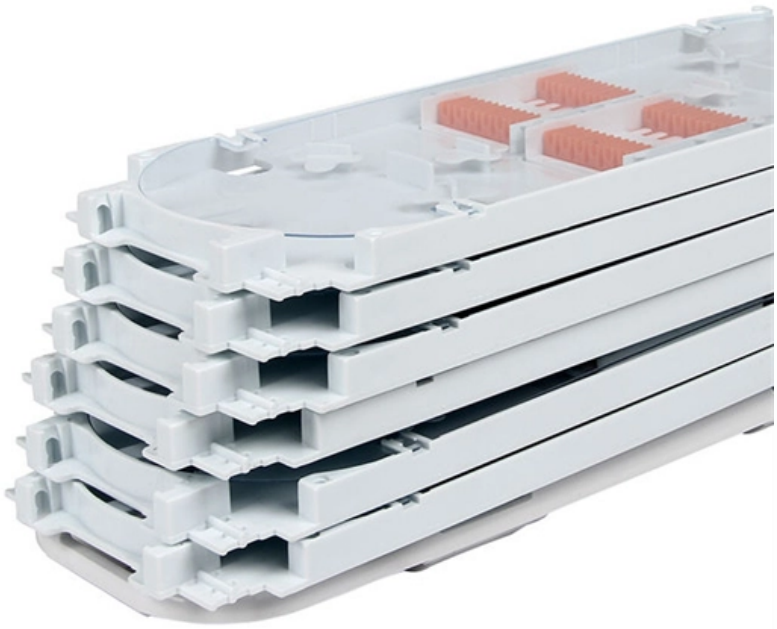
ZTP Thermal & Power

Working principle of D-type fiber optic SPR sensor



Overview

The sensor employs a side-polished few-mode PCF that facilitates the transmission of the fundamental and second-order modes, with an integrated microfluidic channel positioned directly above the fiber core. Research into optical fiber sensors has been prevalent because of their desirable sensing and physical properties. Optical fiber biosensors based on the surface plasmon resonance (SPR) phenomenon are generating increasing interest due to their capability of real-time monitoring of analytes in a biocompatible, label-free, stable, and cost-effective manner. Its cross-sectional structure encompasses a hexagonal-hole lattice, with one hole selectively filled with toluene for temperature sensing. A novel surface plasmon resonance (SPR) refractive index (RI) sensor based on the D-type dual-mode photonic crystal fiber (PCF) is proposed.

Working principle of D-type fiber optic SPR sensor

(PDF) D-type optical fiber & its application

Firstly, a D-type optical fiber designed by symmetrical removing a portion of its cladding from a single mode step-index optical fiber.

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Reflection-type FO-SPR sensor's working principle. (A)

Reflection-type FO-SPR sensor's working principle. (A) Schematic of the Pt-coated FO-SPR sensor, where the detection occurs by monitoring the light reflected

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