Photonic Crystal Fiber Temperature Sensor

This study introduces a temperature sensor based on a solid-core photonic crystal fiber (PCF) that operates without the need for direct electrical power, instead utilizing light.

This work reports a unique photonic crystal based temperature sensor. The modal analysis of photonic crystal fiber structure for the electric field distribution.

We present a novel dual-core photonic crystal fiber (DC-PCF) temperature sensor with a unique arrangement of circular air holes, enabling ultra-high sensitivity and stability.

Sapphire optical fiber shows great promise for remote sensing in extreme environments approaching 2000 degC, by using laser-processing to form a single-mode waveguide within it. ...

This article describes a photonic crystal fiber (PCF) temperature sensor that utilizes a flat, metal-coated trapezoidal surface. The PCF is made up of two layers of elliptical air holes and a ...

In this paper, a polarization-insensitive temperature sensor based on photonic crystal fiber is proposed. Using finite element method, coupling between core and defected clad is analyzed.

The toluene-filled PCF sensor has a simple structure, high-temperature sensitivity, and good linearity. This simple all-fiber structure temperature modulator can be applied for high-precision ...

In this paper, we proposed a temperature sensor based on a birefringent PCF for temperature measurements from -20 °C to 20 °C.

This study introduces a temperature sensor based on solid-core photonic crystal fiber that exhibits insensitivity to polarization. The coupling condition between the core and defect modes ...

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