

This work demonstrates a novel fiber-optic sensing architecture that successfully breaks the conventional trade-off between measurement range and sensitivity in interferometric temperature ...

Distributed fiber-optic sensors are widely used to monitor temperature and strain in infrastructure, but their spatial resolution has long been limited.

This paper reviews the sensing principle, structural design, and temperature measurement performance of fiber-optic high-temperature sensors, as well as recent significant ...

This paper proposed a fiber optic temperature sensor with an ultra-wide detection range based on the polydimethylsiloxane (PDMS) film-coated tapered single-mode fiber (SMF).

Unlike traditional electrical temperature sensors (e.g., thermocouples, RTDs), fiber optic sensors offer significant advantages such as immunity to electromagnetic interference (EMI), high-temperature ...

These results underscore the capabilities of optical fibers as cutting-edge temperature sensors for applications in diverse areas such as environmental monitoring, industry, and healthcare.

Fiber-optic high-temperature sensors are gradually replacing traditional electronic sensors due to their small size, resistance to electromagnetic interference, remote detection, multiplexing, and distributed ...

Here, a novel fiber-optic temperature sensor based on the Vernier effect with switchable sensitivities and dynamic ranges was theoretically proposed and experimentally demonstrated.

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A high-sensitivity fiber optic temperature sensor based on the enhanced harmonic Vernier effect (HVE) is proposed, which consists of two Fabry-Perot interferometers (FPI) that are ...

In this review, we present the current research status of fiber Bragg grating (FBG) and Fabry-Perot interferometer (FPI) optical fiber high-temperature sensors, and summarize the progress of the ...

By the end of this article, you'll gain a deeper understanding of how fiber optic temperature sensing can transform your approach to temperature monitoring and enhance your engineering projects.



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