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When the sensor is exposed to hydrogen, the refractive index of sensitive film on the cleaved end of optical fiber will change, and then the reflective efficient of light that transmitted in the ...

This paper illustrated and demonstrated fiber-optic hydrogen sensing technology based on the thermo-optic effect and nanomaterials, which combines the advantages of fiber-optic grating technology and ...

Side holes are drilled on the fiber to allow rapid infusion of H₂ gas from the surrounding. Raman scattering signal from H₂ is guided by the fiber and can be detected at either end of the fiber.

In the past three decades, varieties of optical fiber hydrogen sensors have been proposed, which could be categorized into five types, including interference type, micromirror type, evanescent ...

Since H₂ has physicochemical properties of being highly permeable and combustible, high-performance H₂ sensors to detect and monitor hydrogen concentration are essential.

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Remote detection of hydrogen, without the utilization of electronic component or elevated temperature, is one of the hot topics in the hydrogen technology and safety. In this work, the design ...

Most of the interference fiber optic hydrogen sensors rely on the principle of the interference of the light in fiber, including the Mach-Zehnder interferometer, Michelson ...

This paper reviews the state-of-art development of the fiber optic hydrogen sensing technology. The main developing trends of fiber optic hydrogen sensors are based on two kinds of hydrogen sensitive ...

To further increase safety levels when dealing with hydrogen, researchers at the Fraunhofer Institute for Telecommunications, Heinrich-Hertz Institute, HHI are working on fiber-optic-based sensors that can ...

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