

Sensitivity of Fiber Optic Thin-Film Acoustic Sensor

In the first half of this thesis, I present a highly sensitive fiber optic acoustic sensor that meets these requirements by utilizing a high-reflectivity photonic-crystal diaphragm 450 nm thick to convert the ...

The acoustic tests indicate that the optimized fiber-optic acoustic pressure sensor has a sensitivity as high as 2253.2 mV/Pa, and the acoustic overload point (AOP) and signal-to-noise ratios (SNRs) can ...

The sensor exhibits a broadband response ranging from 200 Hz to 100 kHz, maintains an average sensitivity of 457.3 mV/Pa within the range of 6 to 30 kHz, and can detect weak acoustic signals ...

The most sensitive fiber-optic acoustic sensors reported so far are based on FP cavities, and the recent works suggest that this can be further improved by using diaphragms of different materials with the ...

Although the primary component of optical fiber, silica, exhibits low thermo-optic and thermal expansion coefficients, FPI is highly sensitive to changes in both cavity length and refractive ...

To achieve ultrahigh sensitivity acoustic detection, a silicon cantilever-based fiber-optic acoustic sensor (FOAS) formed by a Fabry-Perot interferometric structure is proposed in this work. Theoretical ...

A novel approach combined with the fiber-optic external Fabry-Perot interferometric (EFPI) acoustic sensor and deep learning is proposed in this article, which achieves high-sensitivity ...

In this work, a cross-shaped fiber-optic sensor array was prepared and then used to detect and track a small drone flying in the field.

This paper focuses on a reference measurement and analysis of optical fiber cables sensitivity to acoustic waves.

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