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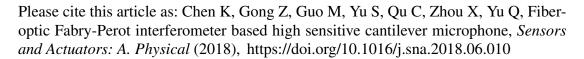
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# Fiber-optic Fabry-Perot interferometer based high sensitive cantilever microphone

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Highlights

- A fiber-optic Fabry-Perot interferometer based high sensitive cantilever microphone is proposed.
- The small fiber-tip sensor head and the demodulation module are connected by a single fiber.
- High sensitivities in the frequency range from 100 Hz to 3 kHz.
- The pressure sensitivity and the noise-limited minimum detectable acoustic pressure level are measured to be 364 nm/Pa and 8.5  $\mu$ Pa/Hz<sup>1/2</sup> at 1 kHz.

#### **Abstract**

We demonstrate a high sensitive cantilever microphone based on fiber-optic Fabry-Perot interferometer. A stainless steel cantilever is manufactured by laser micromachining technique. The size of the cantilever is 2 mm×1 mm, and the thickness is 10 µm. The air gap between the fiber endface and the cantilever forms the Fabry-Perot cavity. Acoustic sensing test demonstrates high sensitivities in the frequency range from

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