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Acoustic Resonance Flow Sensor

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Inventors

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Invention Description

The monitoring and control of gas flows are important in industrial applications, including fluid transport and delivery and in medical applications such as oxygen delivery and breath measurements. Flow sensors have been built on many principles including mass transport, mechanical measurements of flow and/or pressure, optical techniques, and many others. However, there still exists a need for a flow sensor that is simple, compact, and inexpensive.

Researchers at the Biodesign Institute of Arizona State University have developed a novel method to measure flow rate using acoustic resonance. This technique converts the measured flow rate into a sound. As the sonic frequency is dependent on flow rate, the resultant signal can be measured with relatively simple electronics to determine the flow rate.

The low cost and simplicity of this method give it many potential applications, particularly in consumer and medical applications. Additionally, this technology will be useful in developing countries and can even be adapted to smart phones.

Potential Applications

- Consumer and medical device applications
- General flow measurements (including meteorological) without complex equipment, such as would be useful in developing countries
- Adaptable to smart phones

Benefits and Advantages

- Simple, inexpensive, small form factor
- Easily incorporated into new designs or retrofitted into existing designs

Intellectual Property Status:

Provisional Application Filed

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