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Method for Packaging Advanced Sensors and Electronics

This technology integrates sensors and electronics for use in biological experiments and clinical diagnostics

Inventors at Georgia Tech have developed a high density sensing platform that allows fluid delivery to a sensor array integrated with electrical interconnects to report sensor readings. These platforms utilize low cost wafer-scale semiconductor manufacturing technologies. Fluidic channels and sensors are fabricated on a silicon substrate with a second layer containing interconnected electronic leads to transmit sensor output. This invention also provides a new way of integrating microfluidic sensors with electronics and enables a new paradigm for biological based experiments.

Summary Bullets

- **High volume** — device can be used for simultaneous sensing of thousands of proteins or nucleic acid sequences
- **Cheaper** — utilizes low cost wafer-scale semiconductor manufacturing technologies
- **Versatile** — can be used for many chemical and biochemical sensors

Solution Advantages

- **High volume** — device can be used for simultaneous sensing of thousands of proteins or nucleic acid sequences
- **Cheaper** — utilizes low cost wafer-scale semiconductor manufacturing technologies
- **Versatile** — can be used for many chemical and biochemical sensors

Potential Commercial Applications

- Microfluidic sensors
- Study of gene expression and personalized medicine
- Disease detection

Background and More Information

Early detection is essential in effective cancer treatment. Many different sensor technologies are under development for this purpose and for a variety of other chemical and biological sensing applications. However, there is a need for these sensors to be packaged and connected with electronics to convey sensing results to make them suitable for clinical and commercial use.

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Publications

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Images

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