

Generalized Coating of Sensors for Selectivity (#3939)

A combination of a system and methods that employ conductometric gas sensors

A Georgia Tech inventor has created a system and array of conductometric sensors, devices including conductometric sensors, and methods of making conductometric sensors and gas sensors. This device includes a conductometric gas sensor including a n-type substrate with a porous layer. The plurality of nanostructures are disposed on a portion of the porous layer and provide a fractional coverage on the porous layer. The conductometric gas sensor is used to transduce the presence of a gas into an impedance change, where the impedance change correlates to the gas concentration.

Benefits/Advantages

- **Functionality** — functions across a broad temperature and pressure range
- **Durable** — works well in elevated temperature environments
- Sensitive
- Controllable
- **Enhancements** — enhanced sensor, micro-reactor, and nanostructure conversion capability

Potential Commercial Applications

- Development and mediation of MEMS/NEMS sensing/micro-reactor technology
- Hybrid devices with greater sensitivity
- Potential to replace traditional metal oxide sensor system
- Optimal sensor interfaces and arrays and transducing interfaces

Background/Context for This Invention

Despite significant effort, much of the basic science and technology that can provide a general means to link sensor and micro-reactor design in a framework applicable to detect and transform gas phase analytes and analytes in aqueous solution, has not yet been developed. There is a need for the development of a rational and general approach to generate efficient an interface that can detect, sequester, and destroy harmful analytes.

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More Information

U.S. Patent Issued - [9,557,285](#)

U.S. Patent Issued - [8,573,030 B2](#)

Publications

For more information about this technology, please visit:

<https://licensing.research.gatech.edu/technology/generalized-coating-sensors-selectivity>