Ultra-sensitive and Ultra-stable Chemical Sensor Based on Ultra-thin Organic Thin-Film Transistors

Tech ID: 20582 / UC Case 2007-176-0

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have developed a field-effect transistor device with a semiconducting organic thin-film as an active channel material capable of absorbing chemical vapors. The channel conductance changes in the presence of chemical vapors. Experimental data on a number of analytes shows markedly improved sensitivity over existing devices, and a base-line drift in the presence of chemical vapors of less than 0.03 percent / hr.

This sensor device can be utilized in handheld gas chromatographs, or as a household sensor for detecting gas leakage. Other applications are explosive vapor detector at airport security checkpoints and chemical warfare agent detection.

STATE OF DEVELOPMENT

This technology is presently available for licensing.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,384,409	02/26/2013	2007-176

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OTHER INFORMATION

CATEGORIZED AS

- Nanotechnology
  - Other
  - Tools and Devices
- Security and Defense
  - Other
- Sensors & Instrumentation
  - Analytical
  - Environmental Sensors
  - Other

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