

# Gas Sensors For Hazardous Chemical Detection

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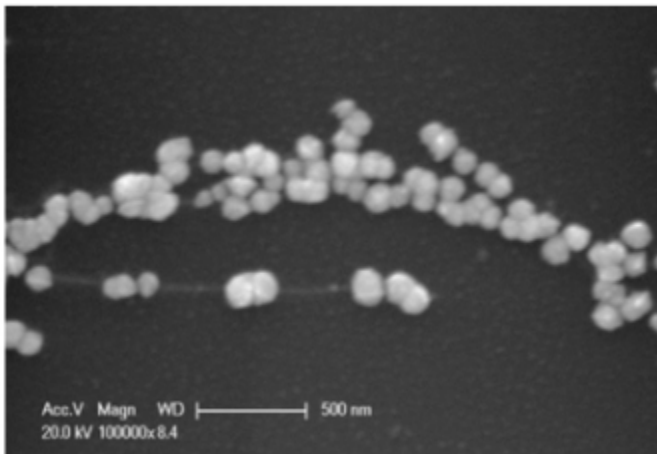
## BACKGROUND

Anosmics, individuals lacking a sense of smell, are unable to identify signals of danger, such as smoke from fire, the smell from rotten or spoiled food, or natural gas leaks. In general without gas sensors, people are unable to identify when dangerous and odorless gases such as carbon monoxide are present. Therefore gas sensors can be life-saving since they warn of potential hazards by detecting the presence of harmful gases.

## BRIEF DESCRIPTION

Prof. Nosang Myung and colleagues from the University of California, Riverside have developed state-of-the-art gas sensors that may be used to create an electronic nose. This device is known as ChromaNose. ChromaNose is capable of sensing carbon monoxide, hydrogen sulfide, hydrogen gas, oxygen gas, nitrogen dioxide, and ammonia at room temperature. This technology may be used in various applications to detect harmful chemicals that people cannot see or smell.

For example, ChromaNose may detect cleaning solvent residue left in masks worn by Air Force personnel. The inhalation of cleaning solvent residue causes the wearer to become ill. It would be desirable to detect and remove any cleaning solvents remaining in a mask to prevent illness.



**Fig 1:** Image of the UCR Pt/SnO<sub>2</sub>/SWNT hybrid nanostructure sensors.

## APPLICATIONS

- Identification of spoiled foods, hazardous chemicals, personal odors, household natural gas leaks, smoke from a fire, carbon monoxide, and other types of hazardous gases and chemicals.

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,632,057	04/25/2017	2012-850

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## OTHER INFORMATION

### KEYWORDS

carbon monoxide, hydrogen sulfide,  
hydrogen, oxygen, nitrogen dioxide,  
ammonia

### CATEGORIZED AS

- [Sensors & Instrumentation](#)
- [Biosensors](#)
- [Environmental Sensors](#)

### RELATED CASES

2007-108-0, 2012-867-2, 2012-850-0,  
2010-240-0, 2010-170-0, 2007-108-0,  
2004-177-0

United States Of America	Issued Patent	9,206,039	12/08/2015	2010-170
United States Of America	Issued Patent	8,683,672	04/01/2014	2007-108
United States Of America	Issued Patent	8,034,222	10/11/2011	2004-177

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