

Nanostructured Highly-sensitivity Multiplexed Chemical Detector (NYP ID: 0110)

Technology

Based on nanostructured metal oxide arrays, the technology allows for highly sensitive detection of airborne chemicals. The technology allows of the multiplexed detection of chemicals down to the parts per billion levels with high sensitivity (up to 6 orders of magnitude change).

Features

Most gas detectors are able to sense at most a handful of gases at any one time at parts per million concentration. However some applications require detection of chemicals with multiplexing capability at much lower concentration. Nanostructured materials are prime candidates for use as sensing elements. However, cost and technical hurdles associated with materials and process compatibilities hinder practical implementation.

Patent Status : SG Application No:200718693-5

Applications

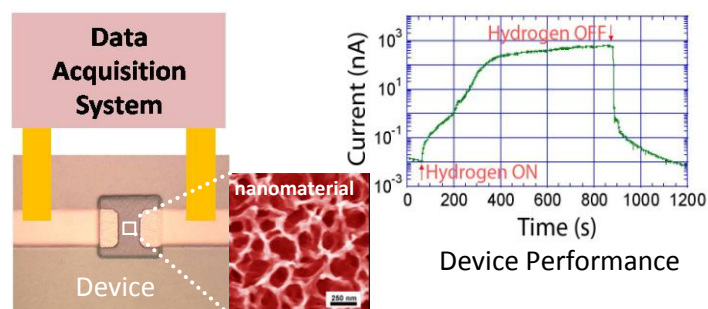
Applications in high vacuum systems, building safety as well as environmental monitoring and protection. Potentially useful in security as well as medical diagnostics.

Research Publication: -

Zuruji, A.S., *et. al.*, Metal Oxide “Nanosponges” as Chemical Sensors: Highly Sensitive Detection of Hydrogen with Nanosponge Titania, *Angewandte Chemie International Edition* 2007, 46, 4298.

Advantages

This technology is a platform technology which addresses process and materials compatibility issues in integrating nanostructured material into devices for chemical detection. This technology allows the fabrication and subsequent modification of individual NST pads in an array and hence enables tailored and multiplexed detection of chemicals. Also sensors can be used over repeated cycles reducing cost.



Centre for Technology Innovation & Commercialization (CTIC)

Technology is available for licensing from Nanyang Polytechnic's Centre for Technology Innovation & Commercialization (CTIC). Companies are invited to submit enquiries and commercialization plans to CTIC.

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