

## Micro and Nanosensors for Gas Detection

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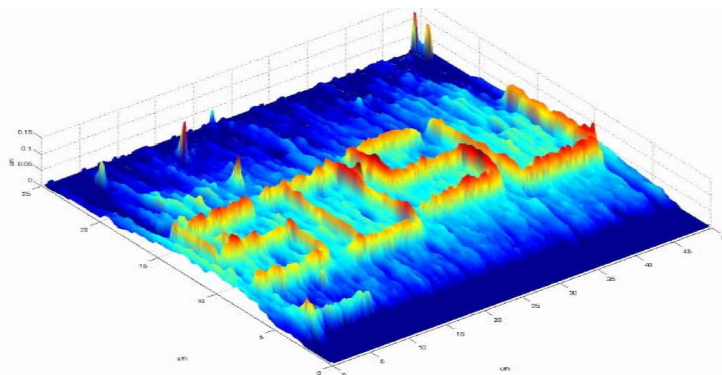
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**Date: November 17, 2006**

**Time: 11:00-12:00**

**Location: DC 1304**

**Abstract:** Toxic industrial chemicals are a major concern for homeland security due to their potential use by terrorists and general human health which would benefit from even a slight reduction (in range of ppb) in the concentration of these pollutants. Existing sensors for measuring these gases, such as semiconducting metal-oxides, are relatively large, and have limited selectivity, sensitivity and stability. This presentation will review several technologies that have been studied to improve the sensitivity, selectivity and stability of gas sensors. These technologies include acoustic, Microelectromechanical systems (MEMS), and nanotechnology based sensors. Nanosensors appear to be promising candidates for this application since they offer a large surface area to bulk ratio and contain unique features that could increase the sensitivity, selectivity and response time of sensors.



*Fig 1. AFM image of In<sub>2</sub>O<sub>3</sub> “SDSU” nanopattern; Grown to illustrate x and y axis control*