



# Ceramic Nanomaterials for Functional Applications



**Perena Gouma**

Center for Nanomaterials and Sensor Development, SUNY Stony Brook, NY, 11794-2275

**NSF DMR-1106168**

## Crystallo-Chemical Approach to Gas Selectivity of Metal Oxides

**This Breathalyzer Reveals Signs of Disease**

NSF Science Nation



**OUTREACH**

### Related Press Coverage

- [http://www.nsf.gov/news/special\\_reports/science\\_nation/breathprinting.jsp](http://www.nsf.gov/news/special_reports/science_nation/breathprinting.jsp)
- <http://ceramics.org/ceramictechtoday/tag/perena-gouma/>
- <http://www.pbs.org/newshour/rundown/2012/05/breathalyzer-gives-new-meaning-to-bad-breath.html>

**NSF DMR-1046599 / IIP-1156513**

## Metal Oxide Nanogrids™ As Photocatalysts for Oil Decomposition

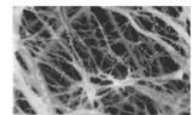
**Turning Wastewater into Drinking Water**

**Reducing benzene contamination by 1000 times!**

Analyses	Sample Result	LOD	LOQ	Qual	Units
VOLATILES BTEX BY 8260 Benzene	3500	25	50		µg/L

From 3.5 ppm

Nanogrids™ ©



Analyses	Sample Result	LOD	LOQ	Qual	Units
VOLATILES BTEX BY 8260 Benzene	130	0.5	1.0		µg/L

Analyses	Sample Result	LOD	LOQ	Qual	Units
VOLATILES BTEX BY 8260 Benzene	2.4	0.5	1.0		µg/L

To 2.4 ppb

**Science Evenings With IDEAS - IDEAS - Hofstra University**

**Nanomaterials for a Healthier and Cleaner World**

Dr. Perena Gouma  
May 3, 2012

### Related Press Coverage

- [http://m.cnn.com/us\\_news/45754560](http://m.cnn.com/us_news/45754560)
- <http://www.fastcoexist.com/1679006/why-you-may-not-mind-drinking-fracking-water-in-the-future>