



Press Release



November 2009

SMI Announces NSF Phase I STTR Award to Develop Graphene Based NO_x Detector

Structured Materials Industries, Inc. announced that it has received STTR Phase I funding from the National Science Foundation to develop a high sensitivity NO_x detector. The detector is based on the recently discovered material - *graphene*. In its most elemental form, graphene consists of a single layer of carbon atoms in a hexagonal array. Since first isolated in 2004, scientists have been rapidly documenting the unusual physical and electrical properties of graphene, and the many potential commercial applications of this truly unique material. Gas detectors will most likely be the first commercial application for graphene based devices. Graphene films can potentially detect down to a single molecule of an adsorbed gas.

In this STTR Project, Structured Materials Industries will work with Cornell University www.cornell.edu and the University of South Carolina www.sc.edu, who bring expertise in graphene film growth and gas detector characterization respectively. Many more applications for graphene are anticipated to follow, ranging from high speed transistors to spintronic devices to radiation detectors (THz through infrared to optical) to NEMS devices. Graphene also offers the potential to combine these functions into a single device. Structured Materials Industries and our University partners intend to develop other graphene based products, along with the materials technology and the commercial film deposition tools for graphene.

Structured Materials Industries, Incorporated is a leader in advanced and custom Chemical Vapor Deposition (CVD) tool and related technologies. SMI offers for sale: systems, components, materials, and process development services. SMI has an in-house applications laboratory featuring multi-reactor deposition systems and analytic capabilities, has developed a range of strategic partnerships to develop and implement MOCVD technology and looks forward to continuing to grow and expand upon mutually advantageous relationships.

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