



## NEWS RELEASE

### MSU Nanotechnology Research Nets Nano 50 Award

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EAST LANSING, Mich. — A new nanotechnology material developed at Michigan State University has enabled XG Sciences, Inc., a start-up company headquartered in East Lansing, Michigan, to be named a winner in the third annual *Nanotech Briefs* Nano 50 awards program.

*Nanotech Briefs* is a digital magazine that presents the best of government, industry, and university nanotech innovations that have real-world applications in the areas of electronics, materials, sensors, manufacturing, biomedical, optics/photonics, and aerospace/defense. Nano 50 awards recognize the top 50 technologies, products, and innovators that have significantly impacted (or are expected to impact) the state of the art in nanotechnology. The winners are the "best of the best"—the innovative people and designs that will move nanotechnology to key mainstream markets.

XG Sciences, Inc., was recognized for its new nanomaterial -- xGnP™ Exfoliated Graphite NanoPlatelets -- a practical, inexpensive nanoscale material that has a unique set of physical, chemical, and morphological attributes. This new material is the result of several years of research led by Lawrence T. Drzal, University Distinguished Professor in the Department of Chemical Engineering and Materials Science, director of MSU's Composite Materials and Structures Center (CMSC), and chief scientist at XG Sciences.

The key to the new material's capabilities is a fast and inexpensive process for separating layers of graphite (graphene) into stacks less than 10 nanometers in thickness but with lateral dimensions anywhere from 100 nm to several microns, coupled with the ability to tailor the particle surface chemistry to make it compatible with water, resin or plastic systems.

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“This is an exciting development from a variety of perspectives,” said Drzal. “This research has achieved recognition as a major new advance in the field of nanotechnology and it is an example of how student and faculty research conducted in the MSU College of Engineering has the potential to transition to the commercial sector, make a positive economic impact, and be a technological benefit to Michigan and the nation.”

Research has shown that adding xGnP to polymers at low concentrations results in nanocomposites that are multifunctional in that they possess an array of enhanced properties--including improved strength and significantly increased electrical and thermal conductivity--leading to new and expanded applications. This will lead to their incorporation in: the aerospace industry for lightning strike protection, electrical conductivity and greater stiffness; the automotive industry to produce conductive paintable plastics and fuel lines and tanks with superior barrier properties; the packaging industry to produce low permeability materials and electrostatically dissipative materials; and the area of structural applications to produce stiffer, stronger and tougher plastics and composites.

Michael R. Knox, president and CEO of XG Sciences, said, “We are extremely pleased to get the Nano 50 Award. It validates the excitement that we feel about our commercial potential and it will help us get on the radar screens of additional prospective customers. We have seen great interest so far from companies around the world and, as we scale up our production capabilities, we expect to have our first applications in real products soon.”

Funding and support for xGnP research was provided by MSU and a grant from the Michigan Economic Development Corporation’s 21st Century Jobs Fund.

Nano 50 award winners were recognized at a November 14 dinner at the *NASA Tech Briefs* National Nano Engineering Conference (NNEC 2007) in Boston.

For a complete list of Nano 50 award winners, visit [http://www.nanotechbriefs.com/nano50\\_winners.html](http://www.nanotechbriefs.com/nano50_winners.html) .

To learn more about XG Sciences and xGnP technology, go to <http://www.xgsciences.com/about/>.

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