

Nanotechnology research explores energy storage

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In leading the University of Wisconsin Oshkosh's first technology spin-off, Charles Gibson, an inorganic chemistry professor, hopes to make a big impact on the energy storage industry with the tiniest of particles.

Gibson's start-up company, Oshkosh Nanotechnology LLC, recently received a nearly \$83,400 grant from the National Science Foundation Small Business Technology Transfer program.

A sub-grant has been awarded to UW Oshkosh's senior chemistry researcher Annamalai Karthikeyan to work with Gibson to develop and commercialize high-performance electrical energy storage devices with nanophase materials, which have a grain size in the 1 to 100 nm range.

"Dr. Gibson's work is our best example of how University research and faculty entrepreneurship can be complimentary and synergistic as well as successful in attracting external funds to support both research and product development," said Linda Freed, UW Oshkosh grants and faculty development director.

Gibson, who is on sabbatical for the 2009-2010 school year to pursue this opportunity, said his research to develop improved batteries and super capacitors from ceramic nanophase materials started in his campus laboratory in August 2008. His work has benefited from the high-quality electron microscopy instrumentation available at UW Oshkosh.

"We bring to this field of study the ability to create entirely new nanomaterials that offer improved energy storage," he explained.

Nanomaterials, which exist at the interface between atomic particles and solid materials, sometimes exhibit unusual or unexpected properties, such as the improved energy storage capabilities Gibson is exploring.

Two patent applications from Gibson's work in this area have been filed through the WiSys Technology Foundation, which supports research and educational programs at the UW campuses.

The materials have a number of possibilities for practical application, including improved storage of energy from green sources, such as solar and wind power; improved lifetime and increased miles between recharges for electrical automobiles; and the development of electric airplanes.

Gibson currently is working to create a business plan for Oshkosh Nanotechnology and to find the most appropriate niche application for the company's first product.

- Learn more about WiSys at <http://www.wisys.org>.