

Notre Dame receives TARDEC grant for next-generation batteries

December 7 2010, By Nina Welding



Faculty from the University of Notre Dame's Colleges of Engineering and Science have been awarded more than \$1.3 million from the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) in collaboration with research being conducted by Mississippi State University on the development of novel materials for improved battery technology.

Li-air batteries offer one of the highest theoretical [energy](#) densities of any electrochemical power source and more than twice as much as any other existing [battery](#). The goal of this project is to improve battery performance, reliability and safety through the creation of new materials to be used in the batteries that power military vehicles, such as manned and unmanned ground vehicles, directed energy weapons, and hybrid

electric vehicles. These technologies are critical for the development of military hybrid vehicles where higher current capability, greater storage capacity, improved durability and reliability are of utmost importance to the safety of the [vehicle](#) and its occupants.

Participating University faculty include Keating-Crawford Professor of Engineering Joan F. Brennecke, Edward J. Maginn, and Paul McGinn (chemical and biomolecular engineering); Alan C. Seabaugh and Susan Fullerton (electrical engineering); and Rev. John A. Zahm Professor of Science Prashant Kamat (chemistry and biochemistry). They will be developing improved electrolytes and electrode structures for use in lithium ion and lithium-air (Li-air) batteries.

TARDEC's developments in the areas of vehicles, energy storage, batteries and other power show its ability to form partnerships with its industry and academic counterparts, like Notre Dame. These partnerships play an important role in reducing the Army's logistics burden, keeping soldiers safer and increasing national energy security.

The University team is working through the Notre Dame Energy Center. Established in 2005, the center is developing new energy technologies to meet the compelling national and international energy challenge by focusing on clean coal utilization; carbon dioxide separation, storage and usage; safe nuclear waste storage; renewable energy resources and energy efficiency.

Provided by University of Notre Dame

Citation: Notre Dame receives TARDEC grant for next-generation batteries (2010, December 7) retrieved 25 April 2024 from

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