

## 2012/2013 Energy Research Grants – Cycle 7

**NCESR.** The Nebraska Center for Energy Sciences Research (NCESR), a collaboration between the Nebraska Public Power District (NPPD) and the University of Nebraska-Lincoln (UNL), was established in April 2006 to conduct research on renewable energy sources, energy efficiency and energy conservation; and to expand economic opportunities and improve quality of life for Nebraska and the nation.

**Goal.** The overall goal of the NCESR is to foster research and education in energy sciences by providing funding to support innovative research and collaboration among University of Nebraska-Lincoln faculty and other public- and private-sector organizations and businesses working in energy sciences.

**Request for Proposals.** The NCESR released the Request for Proposals (RFP) for its seventh competitive round Energy Research Grants on April 11, 2012.

**Selections.** The External Advisory Committee (EAC) met on October 23, 2012 and selected seven energy research projects.

- *Developing Efficient Pyrite Photovoltaic Cells* – Jinsong Huang, Assistant Professor, Department of Mechanical and Materials Engineering
- *Three-Dimensional Graphene-Based Scaffolds for Supercapacitor Applications* – Alexander Sinitskii, Assistant Professor, Department of Chemistry
- *Developing a Break-Through in Methane Production from Anaerobic Digestion of Open-Lot Feedlot Manure* – Galen Erickson, Professor, Department of Animal
- *High Throughput Screening for Compounds that Induce Lipid Accumulation in Algae for Biofuel Production* – Concetta DiRusso, Professor, Department of Biochemistry
- *Near-Field (Nano-Gap) Concentrated Solar Thermophotovoltaic Microsystem* – Sidy Ndao, Assistant Professor, Department of Mechanical and Materials Engineering
- *Enhancement of Pyroelectric Effect on Organic-Inorganic Interfaces* – Axel Enders, Associate Professor, Department of Physics and Astronomy
- *Collaborative Carbon Capture Research* – Yasar Demirel, Professor, Department of Chemical and Biomolecular Engineering

**Project Period.** Each project is intended to cover the two-year period of January 1, 2013 through December 31, 2014. Funding was provided for the first year. Funding for the second year is provisional and based on project performance.