



NEBRASKA CENTER FOR ENERGY SCIENCES RESEARCH

2026 - 2027 Energy Research Grants – Cycle 20 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 twentieth competitive round of Energy Research Grants on March 17, 2025. The External Advisory Committee (EAC) met on December 9, 2025 and selected the following eight energy research projects:

- *Enhanced Energy Storage using Antiferroelectric Hafnia-Based Dielectrics* – **Dr. Alexei Gruverman**, Professor of Physics and Astronomy; College of Arts and Sciences
- *Improving circularity by replacing synthetic urea with soy and corn byproducts in feedlot cattle diets* – **Galen Erickson**, Professor of Animal Science; Institute of Agriculture and Natural Resources
- *Materials development for combined neutron and alpha voltaics* – **Robert Streubel**, Assistant Professor of Physics and Astronomy; College of Arts and Sciences
- *Polariton-Based Optical Neural Networks Toward Next-Generation Energy-Efficient Artificial Intelligence* – **Yanan (Laura) Wang**, Assistant Professor of Electrical and Computer Engineering; College of Engineering
- *Femtosecond Laser Processing for Direct Bonding of Thermoplastics and Metals in Wind Turbines* – **Lucia Fernandez-Ballester**, Assistant Professor of Mechanical and Materials Engineering; College of Engineering
- *Natural Polymer Electrolytes for Sustainable Batteries* - **Shudipto Konika Dishari**, Ross McCollum Associate Professor of Chemical and Biomolecular Engineering; College of Engineering
- *Corrosion Behavior of Galvanized Pipes Once Lead is Eliminated* – **Jian Wang**, Professor of Mechanical and Materials Engineering; College of Engineering
- *Fabrication and Diagnostics of Fuel Targets for Laser-driven Inertial Confinement Fusion* – **Yongfeng Lu**, Lott University Professor of Electrical and Computer Engineering; College of Engineering