

2021/2022 Energy Research Grants – Cycle 15 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 fifteenth competitive round of Energy Research Grants on April 1, 2020. Selections. The External Advisory Committee (EAC) met on November 30, 2020 and selected the following eight energy research projects:

- Optimization of Biosoprene Production from Renewable and Captured Carbon - Nicole Buan, Associate Professor, Department of Biochemistry
- Application of Biochar as Carbon Sequestering and Beneficial Additive in Concrete – Jiong Hu, Associate Professor, Department of Civil & Environmental Engineering
- Charge-Carrier-Lattice Interactions in Halide Perovskite Soft Semiconductor Devices – Yinsheng Guo, Assistant Professor, Department of Chemistry
- Strain-Engineering Enhancement of Energy Efficiency of Solar Cells Based on Organic Halide Perovskites – Alexi Gruverman, Professor, Department of Physics & Astronomy
- Strategies to Sequester Carbon and Improve Soil Productivity in Nebraska: Biochar and Cover Crops - Humberto Blanco, Professor, Department of Agronomy & Horticulture
- Co-gasification of DDGS and Biomass for Hydrothermal Hydrogen Gas Production – Sibel Irmak, Research Associate Professor, Department of Biological Systems Engineering
- Low Temperature Titanium Extraction from Low-Cost Pigments (TiO₂) – Li Tan, Associate Professor, Department of Mechanical & Materials Engineering
- Utilization of Biochar as a Methane Management Strategy in Cattle – Andrea Watson, Research Assistant Professor, Department of Animal Science