

Lignite Research Program- Grant Round 77- Application Summaries

Application Number	Application Title	Applicant	Project Duration	Summary of Project	Funding Requested	Total Project Cost
LRC-77-A	Combustion Enhancement of Solid Fuels Using ClearSign's Technology	ClearSign Combustion Corporation	30 Weeks	To evaluate ClearSign's Electric Combustion Control (ECC) technology, which uses high-voltage electric fields to improve combustion efficiency and reduce harmful emissions. Testing with solid fuels such as lignite coal, and biomass will assess ECC's ability to lower NOx, carbon monoxide, and particulate emissions while enhancing heat transfer, flame control, and overall combustion performance. The research aims to advance cleaner and more efficient industrial combustion systems.	\$50,000	\$1,150,000
LRC-77-B	Enhanced High Capacity Sorbent and Process for CO2 Capture Using Hybrid Sorption (E-CACHYS)	Envergex LLC & University of North Dakota	24 Months	To advance the E-CACHYS carbon capture technology by developing enhanced solid sorbents that increase carbon dioxide capture capacity while reducing energy use and operating costs. The research will improve sorbent manufacturing and durability, demonstrate the technology using coal-derived flue gas at UND's slipstream facility, and evaluate its commercial potential for large scale deployment of cost-effective carbon capture systems.	\$50,000	\$1,097,111

LRC-77-C	Validation of the Multielement Sorbent Trap (MEST) Method for Measurement of HCl and Metals	Energy & Environmental Research Center	18 Months	To validate the EERC's multielement sorbent trap (MEST) technology as a simpler, lower-cost alternative to EPA sampling methods for measuring hydrochloric acid (HCl) and hazardous air pollutant emissions from power plants. Through laboratory and pilot-scale testing, the project will generate the data needed for EPA approval, helping utilities achieve regulatory compliance with reduced sampling costs and improved efficiency.	\$245,000	\$860,000
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