

State Grant Supports Study of Aluminum Energy Efficiency

LEXINGTON, Ky. May 1, 2007 (Secat Inc. release) - The University of Kentucky Center for Aluminum Technology (CAT) will receive a \$181,200 state grant to study energy efficiency in aluminum melting, a project that could help the industry save up to \$9 million annually.

The grant, the largest of five energy research grants announced April 20 by the state Office of Energy Policy, will support the study titled "***Aluminum Melting Furnace Design Optimization Using Integrated Modeling***," a CAT project designed to improve efficiency in the aluminum melting process. The principal investigator is Subodh Das, director of CAT, which is affiliated with the UK College of Engineering.

"The goal is to help improve the energy efficiency in aluminum melting from the current industry average of 2,000 Btu per pound to the practically achievable average of 1,500 Btu per pound, and move toward the theoretically possible level of 550 Btu per pound," Das said. "There are many aluminum companies in Kentucky, and we are hopeful that the research findings from this project will keep them competitive in today's global market."

The project focuses on the use of simulation software packages developed in previous United States Department of Energy (USDOE) projects to assist CAT's industrial partners in redesign and modification of existing melting and holding furnaces.

The energy saving potential in the proposal for Kentucky's aluminum industry, based on the USDOE-accepted Government Performance Reporting Act (GPRA) spreadsheet approach, would be over one trillion Btu by 2025. At current natural gas cost of \$8 per million Btu, the annual savings will approach \$9 million in current dollars.

For the U.S. aluminum industry, savings are estimated to approach 14 trillion Btu/year, which is equivalent to a cost savings of \$112 million/year.

The Office of Energy Policy announced that it will provide \$518,192 in funding to energy research projects at UK and the University of Louisville. In addition to the CAT project, others funded will focus on biodiesel production and cellulosic ethanol research.

"In October 2006, I committed \$1 million to support research and development projects that specifically address energy efficiency and renewable energy opportunities for the Commonwealth. This is the first installment on that commitment," said Gov. Ernie Fletcher. "Energy efficiency and renewable energy

provide new opportunities and markets for Kentucky. This research will help us capture these opportunities.”

Below is a list of the other projects and the amounts awarded:

- “Canola and Sunflower for Oil/Biofuel Production in Kentucky,” Sam McNeill, University of Kentucky, Biosystems and Agricultural Engineering, \$57,487;
- “Construction of a Fixed Bed Reactor for Continuous Production of Biodiesel,” Mark Crocker, University of Kentucky, Center for Applied Energy Research, \$58,413;
- “Improving Biodiesel Production Efficiency,” David Hildebrand, University of Kentucky, Plant and Soil Sciences, \$85,237; and
“Kentucky Industrial Wood Wastes as a Renewable Energy Resource,” R. Eric Berson, University of Louisville, Department of Chemical Engineering, \$135,855.
- Twenty renewable energy and energy efficiency proposals, valued at more than \$2.1 million, were submitted for evaluation. Those funded were selected on five criteria that included technical merit, partner diversity and relevance to Kentucky’s energy strategy.

The grants, which will be awarded in May, are targeted at advancing the goals of the Commonwealth’s Comprehensive Energy Strategy. The document is available online.

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