The Center for Advanced Materials Processing (CAMP)

CAMP is working in partnership with Applied Sciences Inc. of Cedarville, Ohio, to demonstrate the feasibility and performance of a lightweight, nano-enhanced, electrically conductive polymer electrode. Applied Sciences is one of the world’s leading developers of carbon nanofibers and nano-composite products. CAMP researchers will analyze and design nano-enhanced electrodes for reduction of multiple pollutants from oil- and coal-fired industrial boilers. Applied Sciences will develop the scale-up technology.

Mechanical engineering master’s student Thomas Burke tests a device he designed and fabricated to improve the collection efficiency of a newly patented algae harvesting system.

Institute for Sustainable Energy and the Environment (ISEE)

The Biofuels Research Laboratory within ISEE was recently granted a $545,444 project award to work with AlgaeVenture Systems (AVS) of Marysville, Ohio, to develop and commercialize low-energy harvesting and dewatering of microalgae. The processed microalgae are available for use in a variety of products, including fuels, biopolymers and synthetic chemicals, nutraceuticals, and animal feed. AVS and its partners were successful in securing one of 37 projects awarded from more than 3,500 applicants under the U.S. DOE’s first Advanced Research Project Agency for Energy call for proposals.

Center for Scientific Computing and Immersive Technologies (CSCIT)

CSCIT’s Medical Image Analysis Lab has been collaborating with researchers from the University of Kentucky in using a neuroimaging approach to study multiple sclerosis (MS) brain tissue damage (lesions). A software package for segmentation of MS lesions has been developed to accurately measure subjects’ brain volumes in structures associated with MS pathology. New methods to conduct longitudinal studies on the development of the lesions over time are being explored. The research has potential to help identify the biomarkers of MS in the future.

Associate Professor of Computer Science Jundong Liu (L) and doctoral candidate Shuisheng Xie review experimental results of a neuroimage software package developed for the University of Kentucky Hospital for Multiple Sclerosis’ work in brain tissue damage detection.

Institute for Corrosion and Multiphase Technology (ICMT)

As part of a multiyear grant from Alstom Power and in collaboration with the Dow Chemical Company, the ICMT has been developing experimental and modeling tools for the study and prediction of corrosion and material selection issues encountered in the next generation of carbon capture and storage from fossil fuel power plants. In addition, the ICMT is entering its third year of collaboration with the Ohio Coal Development Office on studies about the corrosive potential of transporting the captured carbon dioxide.

Ohio Research Institute for Transportation and the Environment (ORITE)

ORITE’s National Asphalt Laboratory (NAL), on Ohio University’s Lancaster campus, purchased new equipment by matching funds donated by alumni and industry friends. The equipment is being used in a project funded by the Ohio Department of Transportation that involves collecting asphalt/concrete samples from 20 pavements from around the state, including pavements with performance histories exceptionally above average. The aim of the NAL analysis is to identify the material properties that distinguish exceptional pavements, in order to improve the quality of future asphalt/concrete pavements.

Avionics Engineering Center

The Federal Aviation Administration (FAA) relies heavily on the Avionics Engineering Center to support flight testing and performance evaluation of the Automatic Dependent Surveillance–Broadcast (ADS-B) System. ADS-B is a key surveillance element of the U.S. Next Generation Air Transportation System. In addition to providing air traffic controllers with improved aircraft position reports for display on their tower monitors, it enables air crews to have access to this information for display in the cockpit. ADS-B is the largest single flight-test effort undertaken by the Avionics Engineering Center to date.