

# **Establishment of an Environmental Control Technology Laboratory**

John T. Riley, Telephone: 270/780-2568, Fax: 270/780-2569, email: [john.riley@wku.edu](mailto:john.riley@wku.edu)  
Wei-Ping Pan, Telephone: 270/780-2532, Fax: 270/780-2569, email: [wei-ping.pan@wku.edu](mailto:wei-ping.pan@wku.edu)  
and Kunlei Liu

Materials Characterization Center  
Western Kentucky University, Bowling Green, KY

## **Abstract**

The Materials Characterization Center (MCC) has developed into a focal point for carrying out the mission of Western Kentucky University. The MCC provides the best possible learning opportunities for its students by combining the elements of basic and applied research with public service activities, such as providing analytical services and solutions to problems for regional and national industries, while focusing on the education of students.

The MCC has been involved in energy-related research for over 20 years and has built an international reputation in this area. Several currently funded projects in the Center address the environmental aspects of energy production and include research on reducing the emission of mercury from power plants and the assessment of the effects of coal chlorine on the corrosion of boiler components. Another current project includes a study of sorbent injection in stoker boilers and computer simulations of advanced overfire air systems and exiting air. Funding agencies supporting these projects include the U.S. Department of Energy, the Electric Power Research Institute, The Illinois Clean Coal Institute, TVA, and the East Kentucky Power Cooperative.

Another energy-related initiative in the MCC is the development of a demonstration laboratory for circulating fluidized bed combustion (CFBC) studies. Planned activities for this facility are extended studies of co-firing high sulfur coals with municipal solid wastes. This particular research is also environmentally attractive since it is focused on the firing of high sulfur coal from western Kentucky with minimal emissions. We are pursuing funding for the construction of the CFBC facility.