

Working For You

Presented by the University of Kentucky's Center for Applied Energy Research



Applied Petrology Laboratory

In the Applied Petrology (Microscopy) Lab, research is conducted on the petrographic (mineral and textural relationships) and geochemical characterization of Kentucky coals; the interaction of coal petrology with grinding and beneficiation properties; the petrology of carbons; the characteristics of natural and anthropogenic coal fires; and the petrology of coal-combustion by-products (CCBs), particularly fly ash.

Based on a series of power plant surveys conducted every five years (since 1992), we determine major trends in the quality and production of CCBs. Research has been conducted on the impact of low-NOx combustion on the petrography of fly ash and on the factors influencing the distribution of trace elements, with a current emphasis on flue-gas desulfurization materials.

Research interactions and analytical services outside of the CAER are maintained with coal producers and coal-burning utilities; faculty at several universities; and state and national geological surveys. The laboratory contains five microscopes capable of white- and blue-light microscopy, vitrinite reflectance, and heating-stage studies. Three of the microscopes are equipped with digital cameras.

Analytical Services Include:

1. vitrinite reflectance and maceral analyses of coal;
2. petrographic analysis of mixed coal, coke, tar, and sediments;
3. petrographic analyses of CCBs;
4. as well as more unusual analyses, such as the examination of material collected on air filters.



Contact

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