

Working For You

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



Minerals Processing Laboratory



The Environmental Coal Technologies (ECT) group works on the development of green, low-energy, high-strength construction materials from coal combustion by-products (CCB's), e.g., cements, concretes, grouts, wallboard, masonry block, fillers, etc.

The ECT scientists and engineers have access to an extensive aggregate preparation and characterization laboratory area to do chemical and physical analytical capabilities and have the ability to prepare, cure, and test mortar, concrete, and masonry specimens.

Some of the unique equipment found in the lab includes:

- an HED International rotary kiln, capable of operating at 1350°C;
- laser particle-size analyzers;
- isothermal and adiabatic calorimeters;
- microscopes, and;
- an Instron 600DX hydraulic universal testing machine concrete, capable of tensile, compression, shear, bend, pull-off, and flexural testing.

Expertise Includes:

- Production and applications of special cements
- Characterization of hydration phases
- Characterization and formulation of FGD by-products in cementitious systems
- Elimination of storage ponds
- Low energy/Low-CO₂ cement development
- Special engineering materials
- Modified Portland cement and cement without clinker
- Comprehensive utilization of slag, fly ash, bottom ash, FGD gypsum, red mud, and other industrial wastes



Contact

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