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Web site: <http://www.mines.edu/Research/>

Center for Combustion and Environmental Research (CCER)

The Center for Combustion and Environmental Research (CCER) is an interdisciplinary research and educational unit specializing in the chemistry and physics of exothermic reacting flows. Specific research projects are varied, but they fall into five core areas: detailed combustion chemical kinetic modeling and experiment; combustion flow-field modeling and experiment; combustion spray and aerosol modeling and experiment; optical sensing techniques in combustion; and combustion emissions remediation.

Collaborative projects involve CSM's Engineering Division and Chemical Engineering and Petroleum Refining Department, and often include faculty and students from other universities. Interaction with federal and industrial sponsors not only helps to guide the Center's program, but offers students opportunities after graduation.

Background:

- Founded in 1990, consists of two labs in the Engineering Division and one lab in the Chemical Engineering and Petroleum Refining Department

Areas of Expertise:

- Chemical kinetics and reacting flow modeling
- Basic flame, flow reactor and combustion vessel research
- Novel optical diagnostic techniques, laser spectroscopy

Sponsoring Organizations:

- National Science Foundation
- U. S. Department of Energy
- U. S. Air Force
- Office of Naval Research
- Electric Power Research Institute
- Spectra-Physics
- Conoco
- Phillips Petroleum
- General Motors
- Company Ford Motor Company
- National Renewable Energy Laboratory

Method of Technology Transfer:

- Consulting services for corporations
- Shared grants
- Direct transfer to industrial contacts
- M.S. and Ph.D. students employed by industry

Spin-offs / Contributions:

- Improved understanding of emissions formation and mitigation
- Improved industrial processes
- Development of novel instrumentation

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