United States
Environmental Protection
Agency

Research and Development

Air and Energy Engineering
Research Laboratory
Research Triangle Park NC 27711

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EPA

Project Summary

Pulverized Coal Combustion: Pollutant Formation and Control, 1970-1980

Paul M. Lemieux

The U.S. Environmental Protection Agency (EPA) directed a major research effort during the 1970s to understand pollutant formation during pulverized coal combustion. Understanding the conversion of fuel nitrogen to nitrogen oxides (NO_x) is important, since changes in the combustion process designed to control NO_x emission may also influence the formation of soot, polycyclic aromatic hydrocarbons (PAHs), and unburned carbon, and the vaporization of inorganic constituents. In addition, reduction of sulfur oxides while maintaining low NO_x levels is also important.

This Project Summary was developed by EPA's Air and Energy Engineering Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Organization

The full report details the research that was supported by the Combustion Research Branch of EPA's Air and Energy Engineering Research Laboratory during the 1970s. It is a detailed monograph, written by 19 coauthors, containing sections on:

- The High Temperature Decomposition and Combustion of Pulverized Coal.
- Characterization of Coal and Coal Thermal Decomposition.
- The Fate of Fuel Nitrogen and Ash During Combustion of Pulverized Coal Particles.
- Kinetic Modeling of Gas-Phase Chemistry in Coal Volatiles Combustion.
- Soot and PAH Formation in Coal Combustion.
- The Combustion Rates of Pulverized Coal Char Particles.
- Reduction of Nitric Oxide by Solid Particles.
- Bench-Scale Experiments on the Formation and Control of NO_x Emissions from Pulverized-Coal Combustion.
- Optimization of Burner/Combustion-Chamber Design to Minimize NO_x Formation During Pulverized Coal Combustion.

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The complete report, entitled "Pulverized Coal Combustion: Pollutant Formation and Control, 1970-1980," (Order No. PB90-229 253/AS; Cost: $60.00, subject to change) will be available only from:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650

The EPA Project Officer can be contacted at:

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