Proceedings: Twelfth Annual EPRI Contractors' Conference on Fuel Science and Conversion

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Palo Alto, California
May 13–14, 1987

Conference Organizer
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REPORT SUMMARY

SUBJECTS: Coal cleaning and upgrading / Coal-derived fuels

TOPICS: Coal liquefaction; Coal; Fuel oils; Coal cleaning; Synthetic fuels

AUDIENCE: Fuels engineers / R&D scientists

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Conference participants met for an update on clean liquid and solid-fuel research. Discussion focused on the state of the art of coal liquefaction, coal-oil coprocessing, methanol synthesis, coal science, and advanced coal cleaning. Research on advanced, two-stage liquefaction, as well as on cleaning coal using oil agglomeration and biologic solubilization of coals, produced particularly promising results.

BACKGROUND

This annual conference, part of the EPRI research effort related to fuel science and conversion, continues work begun in 11 previous conferences (the EPRI contractors' conferences on clean liquid and solid fuels). EPRI report AP-4253-SR describes the tenth such conference and AP-5043-SR, the eleventh.

OBJECTIVE

To provide a forum for information exchange among researchers, EPRI staff, and representatives of utilities and government agencies on coal science and coal upgrading.

APPROACH

More than 100 conference participants from the United States and Canada met in Palo Alto, May 13–14, 1987, to hear 19 presentations on the following topics:

- Advanced two-stage coal liquefaction and coprocessing of coal and heavy oils
- Methanol synthesis from CO-rich gas for use in gasifier–combined-cycle power plants
- Coal upgrading, including upgrading of low-rank coals and sulfur reduction from bituminous coals
- Coal science, including coal chemistry and biologic conversion of coal

KEY POINTS

- Work on advanced, two-stage liquefaction at the Wilsonville, Alabama, Advanced Coal Liquefaction R&D Facility demonstrates conclusively that two-stage liquefaction yields increased liquid product and improved

product quality. Both close-coupled reactors and coprocessing of coal and heavy oils result in unexpected increases in plant throughput.

- The development of oil agglomeration technology has advanced significantly. Removal of pyritic sulfur from many coals appears possible.

- The technology for biologic solubilization of coal continues to mature. Rapid conversion of lignite to water-soluble products has been achieved with enzymes produced from white rot fungi.

PROJECT

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NOTICE

ABSTRACT

EPRI's Twelfth Annual Contractors' Conference on Fuel Science and Conversion was held on May 13 and 14 1987 in Palo Alto California. The conference featured results of work on coal science coal liquefaction methanol production coal oil coprocessing and coal upgrading.

PREFACE

The Fuel Science and Conversion Contractors' Conference was held on May 13 and 14 1987 in Palo Alto California. Presentations were given in the following areas:

- Two-stage liquefaction of coal
- Synthesis of methanol from CO-rich gas for use in gasifier combined-cycle power plants
- Coal science including the structure of bituminous subbituminous coal and lignite and biological processing of coal
- Coal upgrading including deashing and dewatering of low-rank coal by oil agglomeration and removal of pyrite sulfur from bituminous coal
- Coprocessing of coal and heavy oils
- Storage compatibility of fuel oils

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