50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO.	2.	PB289660

4. Title and Subtitle

Liquefaction and Chemical Refining of Coal

5. Report Date: July, 1974

6.

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8. Performing Organization Rept. No.

9. Performing Organization Name and Address

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10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address

Battelle Memorial Institute
505 King Avenue
Columbus, Ohio 43201

13. Type of Report & Period Covered

14.

15. Supplementary Notes

A Battelle Energy Program Report.

16. Abstract (Limit: 200 words)

This report discusses the current state of the art for the major processing operations which have been developed for the conversion of coal to clean liquid or solid fuels. These processing operations include (1) aqueous leaching processes, (2) solvent refining processes, (3) catalytic hydrogenation processes, (4) Fischer-Tropsch processses and related syntheses, and (5) pyrolytic or carbonization processes.

Many of the specific processes within each of the major processing operations are discussed in this study. Data are presented for capital and operating costs of coal liquefaction and chemical refining plants. Flow diagrams are included for many of the specific processes described.

Based on this discussion of the current state of the art in the major coal liquefaction processing operations, research and development needs for each of these operations are presented.

17. Document Analysis a. Descriptors

Carbonization
Coal
Cost Estimates
Development
Liquefaction
Research

b. Identifiers/Open-Ended Terms

Aqueous Leaching
Battelle Energy Program
Catalytic Hydrogenation
Fischer-Tropsch
Solvent Refining

c. COSATI Field/Group 05A, 07A, 07D, 14G, 21D

18. Availability Statement

Release Unlimited

Security Class (This Report): UNCLASSIFIED

Security Class (This Page): UNCLASSIFIED

22. Price A06 - A01

THE BATTELLE ENERGY PROGRAM

The Battelle Energy Program has been established to carry out major R&D efforts aimed at developing practical solutions to some of the extremely serious energy-shortage and utilization problems expected to exist in the United States during the 1975-1995 time period. Battelle Memorial Institute has allocated $25 million of its own funds to support this 5-year effort because of the importance to the public of the energy problem. The primary emphasis of the Battelle Energy Program will be placed on coal development, including mining and conversion to clean fuels or chemicals, Coal is the major national energy resource which, through technical developments, holds the greatest promise for filling the gap between the United States requirements for energy and its ability to meet these requirements in the time period of interest.

The R&D Activites described in this report were supported by the Battelle Energy Program. Questions regarding this report or the program as a whole should be directed to the Director, Battelle Energy Program, 505 King Avenue, Columbus, Ohio 43201.

Additional activites of the Battelle Energy Program include publication of Energy Perspectives-a monthly newsletter covering various energy-related topics, and operation of the Energy Information Center-devoted to collecting and analyzing the world's energy publications. Inquiries pertaining to these activities are invited.

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