

Coal Liquefaction and Gasification Technologies

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PREFACE

During the past decade large increases in petroleum prices have had profound effects on the economies of the world. An outgrowth has been evaluations on contributions that can be made by new technologies utilizing coal to energy programs. This book resulted from a study by the Metrek Division of the MITRE Corporation, sponsored by the French national utility, Electricité de France, to explore opportunities for: (1) technologies for coal utilization being developed, and (2) basic research and development on coal utilization technologies.

This study reviews the state-of-the-art of selected liquefaction and gasification processes that have been developed with support from the United States. Information in this study was obtained from sources in the public domain, with contractor project reports to the U.S. Department of Energy as a major source. Conference papers and technical journal articles on process development were another major source often used. These documented sources were supplemented by conversations with personnel from the companies that are the process developers. Much of the information that is crucial to the technical development of the processes is proprietary and not obtainable by the general public.

The processes contained in this review are:

1. liquefaction—Exxon Donor Solvent, H-Coal, Solvent-Refined Coal I and II, Mobile Gasoline Synthesis, Fischer-Tropsch Synthesis and Zinc Halide Hydrocracking; and
2. gasification—Slagging Lurgi, Texaco, Combustion Engineering, COGAS and Shell-Koppers.

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