



PB282429

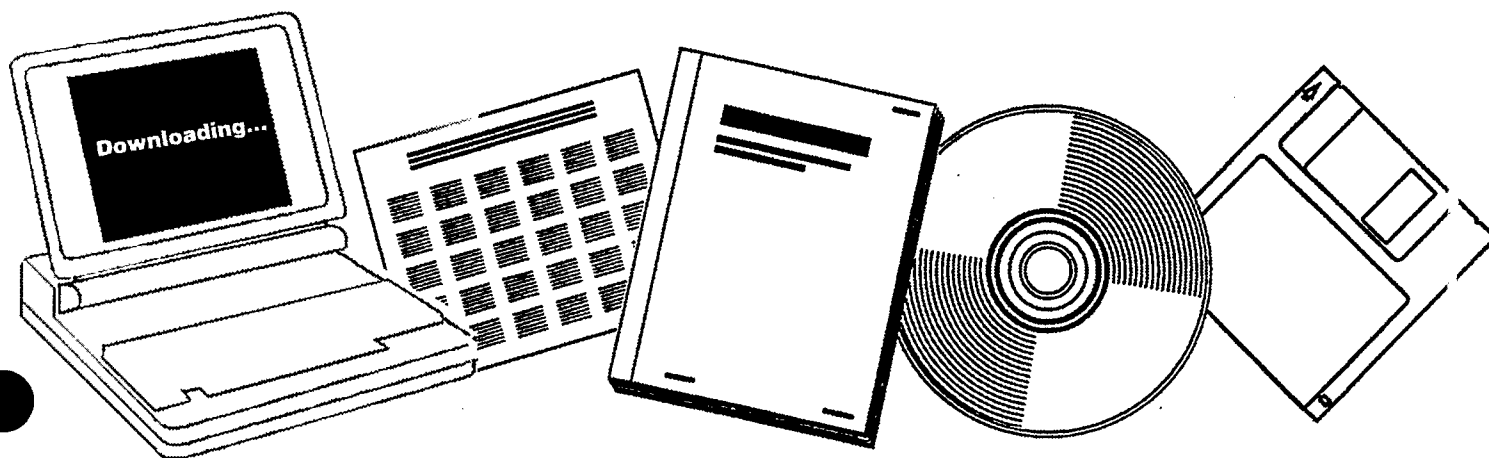
NTIS

One Source. One Search. One Solution.

**SYMPOSIUM PROCEEDINGS: ENVIRONMENTAL
ASPECTS OF FUEL CONVERSION TECHNOLOGY, III
(SEPTEMBER 1977, HOLLYWOOD, FLORIDA)**

RESEARCH TRIANGLE INST., RESEARCH
TRIANGLE PARK, N.C

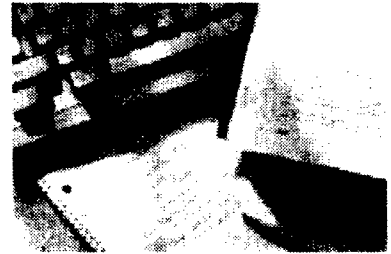
APR 1978



U.S. Department of Commerce
National Technical Information Service

One Source. One Search. One Solution.

NTIS



Providing Permanent, Easy Access to U.S. Government Information

National Technical Information Service is the nation's largest repository and disseminator of government-initiated scientific, technical, engineering, and related business information. The NTIS collection includes almost 3,000,000 information products in a variety of formats: electronic download, online access, CD-ROM, magnetic tape, diskette, multimedia, microfiche and paper.



Search the NTIS Database from 1990 forward

NTIS has upgraded its bibliographic database system and has made all entries since 1990 searchable on www.ntis.gov. You now have access to information on more than 600,000 government research information products from this web site.

Link to Full Text Documents at Government Web Sites

Because many Government agencies have their most recent reports available on their own web site, we have added links directly to these reports. When available, you will see a link on the right side of the bibliographic screen.

Download Publications (1997 - Present)

NTIS can now provides the full text of reports as downloadable PDF files. This means that when an agency stops maintaining a report on the web, NTIS will offer a downloadable version. There is a nominal fee for each download for most publications.

For more information visit our website:

www.ntis.gov



U.S. DEPARTMENT OF COMMERCE
Technology Administration
National Technical Information Service
Springfield, VA 22161

PB282429



EPA-600/7-78-063

April 1978

**SYMPOSIUM PROCEEDINGS:
Environmental Aspects of Fuel
Conversion Technology, III
(September 1977, Hollywood, Florida)**

Franklin A. Ayer and Martin F. Massoglia, Compilers

Research Triangle Institute
P. O. Box 12194
Research Triangle Park, N. C. 27709

Contract No. 68-02-2612
Program Element No. EHE623A

EPA Project Officer: William J. Rhodes

Industrial Environmental Research Laboratory
Office of Energy, Minerals and Industry
Research Triangle Park, N.C. 27711

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, D.C. 20460

FOREWORD

The proceedings for the symposium on "Environmental Aspects of Fuel Conversion Technology, III" is the final report submitted to the Industrial Environmental Research Laboratory for the Environmental Protection Agency Contract No. 68-02-2612. The symposium was held at the Diplomat Hotel, Hollywood, Florida, September 13-16, 1977.

The main objective of the symposium was to review and discuss environmentally related information on coal conversion technology. Papers were presented that covered a summarization of major environmental programs and contaminants in coal, process technology, control technology, process measurements, sampling and analytical information pertinent to coal gasification and liquefaction, and product usage.

Mr. William J. Rhodes, Chemical Engineer, Industrial Environmental Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, was the Project Officer and General Chairman of the Symposium.

Mr. Franklin A. Ayer, Manager, Technology and Resource Management Department, Center for Technology Applications, Research Triangle Institute, Research Triangle Park, North Carolina, was the Symposium Coordinator and Mr. Ayer and Dr. Martin F. Massoglia of the same Department were Compilers of the proceedings.

TECHNICAL REPORT DATA
(Please read instructions on the reverse before completing)

1. REPORT NO. EPA-600/7-78-063	2.	3. RECIPIENT'S ACCESSION NO. PB 287429
4. TITLE AND SUBTITLE SYMPOSIUM PROCEEDINGS: Environmental Aspects of Fuel Conversion Technology, III (September 1977, Hollywood, Florida)		5. REPORT DATE April 1978
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Franklin A. Ayer and Martin F. Massoglia, Compilers		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Research Triangle Institute P.O. Box 12194 Research Triangle Park, North Carolina 27709		10. PROGRAM ELEMENT NO. EHE623A
		11. CONTRACT/GRANT NO. 68-02-2612
12. SPONSORING AGENCY NAME AND ADDRESS EPA, Office of Research and Development Industrial Environmental Research Laboratory Research Triangle Park, NC 27711		13. TYPE OF REPORT AND PERIOD COVERED Proceedings; 4/77-2/78
		14. SPONSORING AGENCY CODE EPA/600/13

15. SUPPLEMENTARY NOTES **IERL-RTP project officer is William J. Rhodes, Mail Drop 61, 919/541-2851.**

16. ABSTRACT **The report covers EPA's third symposium on the environmental aspects of fuel conversion technology. The symposium was conducted in Hollywood, Florida, September 13-16, 1977. Its main objective was to review and discuss environmentally related information in the field of fuel conversion technology. Specific topics were program approach, environmental assessment, and control technology development.**

17. KEY WORDS AND DOCUMENT ANALYSIS			
a. DESCRIPTORS		b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution	Process Variables	Air Pollution Control	13B 13H, 07A
Fuels	Industrial Processes	Stationary Sources	21D
Conversion	Control	Environmental Assessment	14B
Environmental	Measurement	Control Technology	05E
Engineering			
Environments			

18. DISTRIBUTION STATEMENT Unlimited	19. SECURITY CLASS (This Report) Unclassified	22. PRICE A23-A01
	20. SECURITY CLASS (This page) Unclassified	

Page Intentionally Left Blank

Table of Contents

	Page
13 September 1977	
Keynote Address	1
Frank T. Princiotta	
Session I: PROGRAM APPROACH	5
Forest O. Mixon, Session Chairman	
The Synthetic Fuels Program of the Fuel Process Branch of the IERL-RTP	7
T. Kelly Janes	
Environmental Assessment Methodology for Fossil Energy Processes	15
R. P. Hangebrauck	
Development of Multimedia Environmental Goals (MEG's) for Pollutants From Fuel Conversion Processes	53
Garrie L. Kingsbury	
A Non-Site Specific Test Plan	76
Karl J. Bombaugh	
Organic Analysis for Environmental Assessment	95
L. D. Johnson, R. G. Merrill	
Environmental Aspects of Fossil Energy Demonstration Plants	105
James C. Johnson	
Protecting Worker Safety and Health in Coal Conversion	106
Murray L. Cohen	
Environmental Research Related to Fossil Fuel Conversion	113
Gerald J. Rausa	
14 September 1977	
Session II: ENVIRONMENTAL ASSESSMENT	131
E. C. Cavanaugh, Session Chairman	
Low-Btu Gasification-Environmental Assessment	133
William E. Corbett	
High Btu Gasification Environmental Assessment— Work Status and Plans	144
Charles F. Murray, Masood Ghassemi	
Flue Gas Sampling During the Combustion of Solvent Refined Coal in a Utility Boiler	152
Craig G. Koralek, V. Bruce May	

Environmental and Engineering Evaluation of the Kosovo Coal Gasification Plant, Yugoslavia	166
Becir Salja, Mira Mitrovic	
Fate of Pollutants in Industrial Gasifiers	191
Gordon C. Page	
Liquefaction Environmental Assessment	208
Dwight B. Emerson	
A Program for Parametric Evaluation of Pollutants From a Laboratory Gasifier	220
John G. Cleland	
Gasification Process/Environmental Characterization From Pilot Plant Data	242
David V. Nakles, Michael J. Massey	
Trace Elements in the Solvent Refined Coal Process	266
R. H. Filby, K. R. Shah, C. A. Sautter	
15 September 1977	
Analytical Techniques and Analysis of Coal Tars, Waters, and Gases	283
C. M. Sparacino, R. A. Zweidinger, S. Willis	
A Comparison of Trace Element Analyses of North Dakota Lignite Laboratory Ash With Lurgi Gasifier Ash and Their Use in Environmental Analyses	292
Mason H. Somerville, James L. Elder	
Combined-Cycle Power Systems Burning Low-Btu Gas	316
F. L. Robson, W. A. Blecher	
Cross-Media Environmental Impacts of Coal- to-Electric Energy Systems	333
Edward S. Rubin, Cary N. Bloyd, Paul J. Grogan, Francis Clay McMichael	
Session III: CONTROL TECHNOLOGY DEVELOPMENT	359
A. G. Sliger, Session Chairman	
Selection of Acid Gas Treating Processes for Coal Converter Outputs	361
S. E. Stover, F. D. Hoffert	
A Coal Gasification-Gas Cleaning Facility	375
J. K. Ferrell, R. M. Felder, R. W. Rousseau, D. W. Alexander	
Control Technology Development for Products/ By-Products of Coal Conversion Systems	387
Sohrab M. Hossain, John W. Mitchell, Alfred B. Cherry	

Specific Environmental Aspects of Fischer-Tropsch Coal Conversion Technology	409
B. I. Loran, J. B. O'Hara	
Control Technology Development for Fuel Conversion Systems Wastes	424
Louis E. Bostwick	
Volatility of Coal and Its By-Products	431
J. K. Kuhn, D. Kidd, J. Thomas, Jr., R. Cahill, D. Dickerson, R. Shiley, C. Kruse, N. F. Shimp	
Treatment of Phenolic Wastes	447
Stanley L. Klemetson	
Composition and Biodegradability of Organics in Coal Conversion Wastewaters	461
Phillip C. Singer, Frederic K. Pfaender, Jolene Chinchilli, James C. Lamb, III	
Biological Treatment of Coal Conversion Condensates	487
Irvine W. Wei, D. J. Goldstein	
Solubility and Toxicity of Potential Pollutants in Solid Coal Wastes	506
R. A. Griffin, R. M. Schuller, J. J. Suloway, S. A. Russell, W. F. Childers, N. F. Shimp	
Applicability of Coke Plant Water Treatment Technology to Coal Gasification	519
William A. Parsons, Walter Nolde	
Future Need and Impact on the Particulate Control Equipment Industry Due to Synthetic Fuels	528
John Bush	
Future Needs and the Impact on the Water and Waste Equipment Manufacturing Industry Due to the Use of Synthetic Fuels	535
E. G. Korninek	

