



Dharam Punwani Publications & Presentations Before 1996

1. "Fluidized-Bed Gasification of an Eastern Oil Shale," F. S. Lau, D. M. Rue, D. V. Punwani and R. C. Rex, Jr. (HYCRUDE). Paper presented at the 1987 Eastern Oil Shale Symposium, Lexington, Kentucky, November 18-20, 1987.
2. "Gasification Characteristics of Eastern Oil Shale," F. S. Lau, D. M. Rue, and D. V. Punwani. Paper presented at the 1986 Eastern Oil Shale Symposium, Lexington, Kentucky, November 19-21, 1986.
3. "Effects of Temperature and Pressure on the Hydroretorting Yields of Three Eastern Oil Shales," M. J. Roberts, D. V. Punwani, W. C. S. Hu and R. C. Rex, Jr. Paper presented at the Annual Meeting of the American Institute of Chemical Engineers, Miami, Florida, November 2-7, 1986.
4. "Gasification Characteristics of De-ashed and Desulfurized Coals," D. V. Punwani, A. H. Hill, H. L. Feldkirchner and D. Leppin. Paper presented at the 21st Intersociety Energy Conversion Engineering Conference, San Diego, California, August 25-29, 1986.
5. "Status of Current Research for Hydroretorting of Eastern Oil Shales." Paper presented at 1986 Oil Shale Symposium, Golden, Colorado, April 21-23, 1986.
6. "Internal Rotary Compression Press for Dewatering Peat," F. S. Lau, R. P. Bachta, and D. V. Punwani; Graydon, E. Anderson (AMI, Inc.); Wu-Key Wen (U.S. DOE); and R. D. Visness (MDNR). Paper presented at the Symposium '85, A Technical & Scientific Conference on Peat and Peatlands, Quebec, Canada, June 16-20, 1985.
7. "Peat Beneficiation By Wet Carbonization," F. S. Lau, M. J. Roberts, D. V. Punwani, and Wu-Wey Wen (U.S. DOE/PETC). Paper presented at the 189th American Chemical Society National Meeting, Miami Beach, Florida, April 28-May 3, 1985.
8. "Eastern Shale Hydroretorting," M. J. Roberts, H. L. Feldkirchner, D. V. Punwani and R. C. Rex, Jr. Paper presented before the Divisions of Fuel Chemistry and Petroleum Chemistry, Inc., American Chemical Society, St. Louis, Missouri, April 8-13, 1984.
9. "Synthetic Fuels From Oil Shale by the CFFR (Countercurrent Free-Fall Retorting) Process," P. B. Tarman, D. V. Punwani, H. L. Feldkirchner and M. J. Roberts. Paper presented at Synthetic Fuel From Oil Shale and Tar Sands, Louisville, Kentucky, May 17-19, 1983.
10. "Peat Technology and Economics," D. V. Punwani. A chapter published in Handbook of Energy Technology and Economics. New York: John Wiley & Sons, 1983.

11. "Single-Stage Fluidized-Bed Gasification of Peat," D. M. Rue, F. S. Lau, S. A. Weil and D. V. Punwani. Paper presented at the Intersociety Energy Conversion Engineering Conference, Los Angeles, California, August 8-13, 1982.
12. "PEATGAS™ Pilot Plant Operating Results," R. Biljetina and D. V. Punwani. Paper presented at the Intersociety Energy Conversion Engineering Conference, Los Angeles, California, August 8-13, 1982.
13. "Peat as an Energy Alternative," D. V. Punwani. Paper presented in Energy Topics: -- A Periodic supplement to IGT Highlights June 21, 1982.
14. "Hydrogasification PDU Studies on Florida Peat and Peat Dewatered by Various Methods," M. C. Mensinger, F. S. Lau, and D. V. Punwani. Paper presented at the Fifth Technical Contractors' Conference on Peat. Bethesda, Maryland. April 28-29, 1982.
15. "Single-Stage Fluidized-Bed Gasification" F. S. Lau, D. M. Rue, S. A. Weil, and D. V. Punwani. Paper presented at the Fifth Technical Contractors' Conference, Bethesda, Maryland, April 28-29, 1982.
16. "Wet-Carbonization PDU Studies," F. S. Lau and B. Wall. Paper presented at the Fifth Technical Contractors Conference on Pear, Bethesda, Maryland, April 28-29, 1982.
17. "Peat as an Energy Alternative: 1981 Update," D. V. Punwani. Paper presented at Peat as an Energy Alternative II, Arlington, Virginia, December 1-3, 1981.
18. "Overview of Quantities and Locations," R. D. Matthews and D. V. Punwani. Paper presented at Peat as an Energy Alternative II. Arlington, Virginia, December 1-3, 1981.
19. "Comparison of Peat Dewatering Costs," C. L. Tsaros and D. V. Punwani. Paper presented at Peat as an Energy Alternative II, Arlington, Virginia, December 103, 1981.
20. "Single-Stage Gasification," F. S. Lau and D. V. Punwani. Paper presented at Peat as an Energy Alternative II, Arlington, Virginia, December 1-3, 1981.
21. "Recent Advances in Fluidization and Fluid-Particle System," D. V. Punwani, editor, A.I.Ch.E. Symposium Series 77 (205), 1981 .
22. "Review of Peat Gasification and Liquefaction Research," D. V. Punwani and F. S. Lau. Paper presented at the Symposium of Peat, Thunder Bay, Ontario, Canada, October 26-28, 1981.
23. "Single-Stage Fluidized-Bed Gasification," F. S. Lau, E. J. Pyrcioch and D. V. Punwani. Paper presented at the Fourth Technical Contractors' Conference on Peat, Bethesda, Maryland, October 22-23, 1981.
24. "Wet carbonization PDU Studies," F. S. Lau, J. E. Paganessi and D. V. Punwani. Paper presented at the Fourth Technical Contractors' Conference on Peat, Bethesda, Maryland, October 22-23, 1981.

25. "Hydrogasification PDU Studies," M. C. Mensinger, F. S. Lau and D. V. Punwani. Paper presented at the Fourth Technical Contractors' Conference on Peat, Bethesda, Maryland, October 22-23, 1981.
26. "PEATGAS Pilot Plant Status," R. Biljetina and D. V. Punwani. Paper presented at the Fourth Technical Contractors' Conference on Peat, Bethesda, Maryland, October 22-23, 1981.
27. "Testing the PEATGAS Process," D. V. Punwani and R. Biljetina. Paper presented at the Fourth Technical Contractors' Conference on Peat, Bethesda, Maryland, October 22-23, 1981.
28. "High-Pressure Wet Carbonization," J. E. Paganessi, T. M. Knowlton, D. V. Punwani and F. S. Lau. Paper presented at the Third Contractors' Conference on Peat, Bethesda, Maryland, April 29-30, 1981.
29. "PEATGAS Pilot Plant Status," R. Biljetina and D. V. Punwani. Paper presented at the Third Technical Contractors' Conference on Peat, Bethesda, Maryland, April 29-30, 1981.
30. "Single-State Fluidized-Bed Gasification," E. J. Pyrcioch, F. S. Lau, and D. V. Punwani. Paper presented at the U.S. DOE's Third Technical Contractor's Conference on Peat, Bethesda, Maryland, April 29-30, 1981.
31. "Hydrogasification PDU Studies," J. E. Paganessi, F. S. Lau, and D. V. Punwani. Paper presented at the U. S. DOE's Third Technical Contractors' Conference on Peat, Bethesda, Maryland, April 29-30, 1981.
32. "Peat as an Alternative Energy Source," D. V. Punwani and M. C. Mensinger, in Energy Topics: A Periodic Supplement to IGT Highlights, (1981), January 5.
33. "PEATGAS Process Development Status," D. V. Punwani and R. Biljetina. Paper presented at Peat as an Energy Alternative, Arlington, Virginia, December 1-3, 1980.
34. "Solvent Extraction Dewatering of Peat," J. E. Paganessi, C. Sishtla, T. M. Knowlton, D. V. Punwani, and W. W. Bodle. Paper presented at Peat as an Energy Alternative, Arlington, Virginia, December 1-3, 1980.
35. "Peat as an Energy Alternative -- An Overview," D. V. Punwani. Paper presented at Peat as an Energy Alternative, Arlington, Virginia, December 1-3, 1980.
36. "Single-Stage Fluidized-Bed Gasification," E. J. Pyrcioch, and D. V. Punwani. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.
37. "Peat Pretreatment: High-Pressure Wet Carbonization," M. C. Mensinger, and D. V. Punwani. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.
38. "Peat Gasification: Low Severity Hydropyrolysis," J. E. Paganessi, D. A. Duncan, M. C. Mensinger, and D. V. Punwani. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.

39. "Peat Dewatering: Solvent Extraction," J. E. Paganessi, C. I. Sishtla, T. M. Knowlton, and D. V. Punwani. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.
40. "Preparation for Pilot Plant Scale Peat Gasification Tests," R. Biljetina and D. V. Punwani. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.
41. "HYGAS Pilot Plant Modifications for Peat Gasification," D. V. Punwani and R. Biljetina. Paper presented at the Second Technical Contractors' Conference on Peat, Bethesda, Maryland, October 16-17, 1980.
42. "Synthetic Fuels From Peat by the IGT PEATGAS Process," D. V. Punwani, A. M. Rader, and M. J. Kopstein. Paper presented at the 6th International Peat Congress, Duluth, Minnesota, August 17-23, 1980.
43. "Peat Char Gasification-Laboratory and PDU-Scale Studies," D. V. Punwani, S. A. Weil, E. J. Pyrcioch, and S. P. Nandi. Paper presented at the Fifteenth Intersociety Energy Conversion Engineering Conference, Seattle, August 18-22, 1980.
44. "A Model for Attrition in Fluidized Beds," T. P. Chen, C. I. Sishtla, D. V. Punwani, and H. Arastoopour. Paper presented at the International Fluidization Conference, Henniker, New Hampshire, August 3-8, 1980.
45. "SNG From Eastern Oil Shale via the HYTORT Process," H. L. Feldkirchner, S. A. Weil, J. C. Janka, and D. V. Punwani. Paper presented at the American Gas Association Transmission Conference, Salt Lake City, Utah, May 5-7, 1980.
46. "Synthetic Fuels From Eastern Devonian Oil Shales," S. A. Weil, H. L. Feldkirchner, J. C. Janka, and D. V. Punwani. Paper presented at the 7th Energy Technology Conference and Exposition, Washington, DC, March 24-26, 1980.
47. "Synthetic Fuels From Peat: State-of-the-Art Review," D. V. Punwani. Paper presented at the 7th Energy Technology Conference and Exposition, Washington, D.C., March 24-26, 1980.
48. "Peat Beneficiation and its Effects on Dewatering and Gasification Characteristics," M. C. Mensinger, S. A. Weil, D. V. Punwani, and M. J. Kopstein. Paper presented at the 179th American Chemical Society National Meeting, Houston, Texas, March 23-28, 1980.
49. "Kinetics of Peat Gasification," S. A. Weil, D. V. Punwani, M. J. Kopstein, and A. M. Rader. Paper presented at the 179th National Meeting of the American Chemical Society, Houston, Texas, March 23-28, 1980.
50. "Peat Dewatering: Solvent Extraction," D. V. Punwani. Paper presented at First Technical Contractors' Conference on Peat, Rockville, Maryland, March 11-12, 1980.
51. "Peat Gasification: IGT Work in Progress," D. V. Punwani. Paper presented at First Technical Contractors' Conference on Peat, Rockville, Maryland, March 11-12, 1980.

52. "Peat Pretreatment: High-Pressure Wet Carbonization," D. V. Punwani. Paper presented at First Technical Contractors' Conference on Peat, Rockville, Maryland, March 11-12, 1980.
53. "Peat Gasification: Low-Severity Hydropyrolysis," D. V. Punwani. Paper presented at the First Technical Contractors' Conference on Peat, Rockville, Maryland, March 11-12, 1980.
54. "Development and Status of the IGT PEATGAS Process for Production of Synthetic Fuels From Peat," D. V. Punwani, A. M. Rader, and M. J. Kopstein. Paper presented at New Technologies in the Use of Peat, bad Zwischenahn, Germany, November 5-8, 1979.
55. "Synthetic Fuels From Peat Gasification," D. V. Punwani, S. A. Weil, and J. E. Paganessi; M. J. Kopstein, (U.S. DOE). Paper presented at the Fourteenth Intersociety Energy Conversion Engineering Conference, Boston, Massachusetts, August 5-10, 1979.
56. "Synthetic Fuels From Peat," D. V. Punwani. Paper presented at the Management Assessment of Peat as an Energy Resource, Arlington, Virginia, July 22-24, 1979.
57. "The IGT HYTORT Process for Hydrogen Retorting of Devonian Oil Shales," S. A. Weil, H. L. Feldkirchner, D. V. Punwani, and J. C. Janka. Paper presented at the Sixth National Conference on Energy and the Environment, Pittsburgh, Pennsylvania, May 21-24, 1979.
58. "A Review of Design Equations for Dilute Phase Gas-Solids Horizontal Conveying Systems for Coal and Related Materials," H. Arastoopour, M. V. Modi, D. V. Punwani, and A. T. Talwalkar. Paper presented at the Power and Bulk Solids Conference/Exhibition, Philadelphia, Pennsylvania, May 15-17, 1979.
59. "The IGT HYTORT Process for Hydrogen Retorting of Devonian Oil Shales," S. A. Weil, H. L. Feldkirchner, D. V. Punwani, and J. C. Janka. Paper presented at the Chattanooga Shale Conference, sponsored by the Oak Ridge National Laboratory of the U. S. Department of Energy, Oak Ridge, Tennessee, November 14, 1978.
60. "Process Design for Coal Conversion Reactors," W. W. Bodle, A. T. Talwalkar, and D. V. Punwani. Paper presented at the American Institute of Chemical Engineers, National Meeting, Miami, Florida, November 12-16, 1978.
61. "Status of the PEATGAS Process," D. V. Punwani. Paper presented at the Tenth Synthetic Pipeline Gas Symposium, Chicago, Illinois, October 30-November 1, 1978.
62. "The IGT HYTORT Process for Oil Shale Hydrogen Retorting," D. V. Punwani, S. A. Weil, H. L. Feldkirchner, and J. C. Janka. Paper presented at the International Symposium on Oil Shale Chemistry and Technology, sponsored by the Energy Research Center of the Hebrew University of Jerusalem, Jerusalem, Israel, October 29, 1978.
63. "Peat Hydrogasification," S. A. Weil, S. P. Nandi, D. V. Punwani, and M. J. Kopstein. Paper presented at the 176th National Meeting of the American Chemical Society, Miami, Florida, September 10-15, 1978.
64. "Re: Peat," W. W. Bodle, M. Mensinger, and D. V. Punwani, Chemtech, 559-63 (1978) September.

65. "Peat Gasification -- An Experimental Study," D. V. Punwani, S. P. Nandi, L. W. Gavin, and J. L. Johnson. Paper presented at the 85th National Meeting of the American Institute of Chemical Engineers, Philadelphia, June 4-8, 1978.
66. "Gas From Peat -- A Good Source of Heat," D. V. Punwani and A. M. Rader, *Hydrocarbon Processing*, 107-113 (1978) April.
67. "SNG Production From Peat," D. V. Punwani, W. W. Bodle, A. M. Rader, and P. B. Tarman. Paper presented at the Miami International Conference on Alternative Energy Sources, Miami, Florida, December 5-7, 1977.
68. "Peat Gasification for SNG Production," D. V. Punwani and A. M. Rader. Paper presented at the Ninth Synthetic Pipeline Gas Symposium, Chicago, Illinois, October 31-November 2, 1977.
69. "A Dynamic Simulation of the Steam-Iron Reactor System," J. C. Janka, P. B. Tarman, and D. V. Punwani. Paper presented at the 69th Annual Meeting of the American Institute of Chemical Engineers, Chicago, Illinois, November 1976.
70. "Status of the Steam-Iron Program," P. B. Tarman and D. V. Punwani. Paper presented at the American Gas Association Synthetic Pipeline Gas Symposium No. 8, Chicago, Illinois, October 18-20, 1976.
71. "Hydrogen Production by the Steam-Iron Process," P. B. Tarman and D. V. Punwani. Paper presented at the Eleventh Intersociety Energy Conversion Engineering Conference, State Line, Nevada, September 1976.
72. "Development of the Steam-Iron Process for Production of Hydrogen for the HYGAS Process," P. Tarman and D. V. Punwani, Interim Report No. 2, U.S. Energy Research and Development Administration, Washington, D.C., June 1975.
73. "Steam-Oxygen-Char Gasification in a Nonslagging Fluidized Bed," D. V. Punwani, E. J. Pyrocioch, J. L. Johnson, and P. B. Tarman. Paper presented at the Joint A.I.Ch.E.-VTG Meeting, Munich, Germany, September 1974.
74. "Development of the Steam-Iron System for Production of Hydrogen for the HYGAS Process," P. Tarman, D. V. Punwani, M. Bush, and A. Talwalkar, Office of Coal Research R&D Report No. 95, Interim Report No. 1, U.S. Department of Interior, Washington, D.C., June 1974.

Dharam Punwani Patents

1. "Treatment of Solids in Fluidized-Bed Burner," B. S. Lee, P. B. Tarman, and D. V. Punwani, U.S. Patent 4,693,681 (1987) September.
2. "Production of Hydrocarbon Fuel From Peat," S. Weil, D. V. Punwani, and W. Bodle , U. S. Patent 4,263,125 ,(1981) April.
3. "Heat-Efficient Method for Dewatering Solids," W. Bodle and D. V. Punwani, U.S. Patent, 4,233,449, (1980) September.
4. "Heavy Oil Hydrogasification Process," S Weil, P. B. Tarman, and D. V. Punwani; U.S. Patent 3,891,404 (1975) June.
5. "Oil Shale Hydrogasification Process," S. Weil, P. B. Tarman, and D. V. Punwani; U.S. Patent 3,891,403 (1975) June.
6. "Preparation of Oxygen Acceptor Compositions and Oxygen Production Process," L. G. Massey, P. B. Tarman, and D. V. Punwani; U.S. Patent 3,903,010 (1975) August.
7. "Single Reactor Fluidized-Bed Oxygen Enrichment Process and Apparatus," D. V. Punwani, L. G. Massey, and P. B. Tarman; U.S. Patent 3,892,682 (1975) July.