

Appendix I - Bibliography

I - Historical Development

1. Berkman, S., Morrell, J. C. and Egloff, G.
Reinhold Publishing Corp., New York, 1940
Catalysis, Inorganic and Organic.
2. Bosworth, R. C. L.
Australian J. Sci. 5, 28-33 (1942)
Synthetic liquid fuels.
3. Elvins, O. C. and Nash, A. W.
Nature 118, 154 (1926)
The reduction of carbon monoxide.
4. Fischer, F., Koch, H. and Wiedeking, K.
Brennst.-Chem. 15, 229-33 (1934)
The preparation of lubricating oils starting with Kogasin.
5. Fischer, F. and Tropsch, H.
Brennst.-Chem. 7, 97 (1926)
The synthesis of petroleum at atmospheric pressures from the
gasification products of coal.
6. Fischer, F. and Tropsch, H.
Ber. 59B, 830-1, 832-6 (1926)
Direct synthesis of petroleum hydrocarbons at ordinary pressure. I., II.
7. Fischer, F. and Tropsch, H.
Brennst.-Chem. 10, 337-46 (1929)
The preparation of paraffin hydrocarbons.
8. Fujimura, K.
J. Soc. Chem. Ind. (Japan) 34, 136-8, 227-9 (1931)
The catalytic reduction of carbon monoxide at atmospheric pressure.
VIII. The iron-copper catalyst.
9. Fujimura, K.
J. Soc. Chem. Ind. (Japan) 35, 179-182 (1932)
Synthesis of benzine from CO and H₂ at ordinary pressures.
10. Fujimura, K. and Tsuneoka, S.
J. Soc. Chem. Ind. (Japan) 35, (Suppl. binding) 415-6 (1932)
The synthesis of benzine from carbon monoxide at ordinary pressures.
11. Heineman, F.
Pet. Refiner 28, No. 1, 126-7 (1949)
The Fischer-Tropsch hydrocarbon synthesis; its first development.
12. Kodama, S.
Sci. Papers Inst. Phys. Chem. Research (Tokyo) 14, 169-83 (1930) -
in German
On the catalytic reduction of carbon monoxide under normal pressure. VI.

13. Kodama, S. and Fujimura, K.
J. Soc. Chem. Ind. (Japan) 34, (Suppl. binding) 14-16 (1931)
The catalytic reduction of carbon monoxide at atmospheric pressure.
14. Komarewsky, V. I. and Riesz, C. H.
(Institute of Gas Technology, Chicago, Ill.)
Pet. Refiner 23, 415-22 (1944)
The Fischer-Tropsch synthesis and the gas industry.
15. Lane, J. C. and Weil, B. H.
(Gulf Research and Development Co., Pittsburgh, Pa; Georgia School of Technology)
Pet. Refiner 25, No. 3, 87-98 (1946)
Synthine process. I. Introduction, synthesis gas production and purification.
16. Martin, F.
Ind. Chemist 13, 320-6 (1937)
Industrial synthesis of gasoline and oil from water gas.
17. Martin, F.
Oel, Kohle und Teer 13, 691-7 (1937)
Industrial synthesis of gasoline and oil from water gas.
18. Reichl, E. H.
U. S. Naval Technical Mission in Europe
Report No. 248 (1945)
19. Aldrich, R. C. (Lt. U.S.N.R.)
Natl. Petroleum News 37, R922-4 (1945)
Manufacture, regeneration of Fischer-Tropsch catalyst.
20. Smith, D. F., Hawk, C. O. and Golden, P.
(U.S. Bureau of Mines)
J. Am. Chem. Soc. 52, 3221-32 (1930)
The mechanism of the formation of higher hydrocarbons from water gas.
21. Smith, D. F., Hawk, C. O. and Reynolds, D. A.
(U.S. Bureau of Mines)
Ind. Eng. Chem. 20, 1341-8 (1928)
Synthesis at higher hydrocarbons from water gas.
22. Spencer, W. D.
(High Duty Alloys, Ltd.)
Petroleum (London) 7, 76-9 (1944)
Science of coal to oil conversion. III. Hydrogenation of coal and tar.
23. Storch, H. H.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
Chem. Eng. Progress 44, No. 6, 469-80 (1948)
Review of development of processes for synthesis of liquid fuels by hydrogenation of CO.
24. German Patent 293,787 (1913)
(to Bodische Anilin und Soda Fabrik)
25. United States Patent 2,219,042 (1940)
H. Heckel and O. Roelen

II - Preparation of the Synthesis Gas

26. Anon.
(Chem. Eng. News 28, No. 3, 180 (1950)
Electrocarbonization of coal.
27. Atwell, H. V., Powell, A. R. and Storch, H. H.
(Department of Commerce, Washington, D. C.)
Technical Oil Mission Report No. 5, July 19, 1945
Office of Publication Board Report No. 2051
28. Atwell, H. V. and Schroeder, W. C.
Technical Oil Mission Report, No. 8, May 15, 1945
29. Barral, J.
(Ingenieur des Arts et Manufactures)
Chimie and Industrie 57, 441-3 (1947)
Integral gasification of fuels by the Koppers process.
30. Berthelot, C.
Genie Civil 115, 461 (1939)
Conversion of methane and carbon monoxide. Process of the Societe Belge de l'Azote at Renory.
31. Berthelot, C.
Chemie and Industrie 45, 551 (1941)
The complex oil-chemistry-gasoline.
32. Coura, T. and Huzdmura, T.
Report of Natl. Res. Inst. (Formosa) 1939; Chemie and Industrie 43, 814 (1939)
Preparation of hydrogen from the natural gas of Formosa. I. Reaction between methane and steam.
33. Dansila, N. and Piatkowski, T.
Bull. Sect. Sci. Acad. Roumaine 19, 11 (1937)
34. Foster, A. L.
Oil-Gas J. 43, No. 17, 46 (1944)
Fischer-Tropsch synthesis may prove a major (oil) refining process II. Methods of operation.
35. Hall, C. C. and Powell, A. R.
Office of Publication Board Report No. 286
Dept. of Commerce, Washington, D. C.
36. Heinemann, H.
Pet. Refiner 23, No. 1, 117 (1944)
Foreign processes for the conversion of methane to hydrogen and carbon monoxide.
37. Imhausen, A.
Kolloid.-Z. 103, 105-8 (1943)
The importance of synthetic fatty acids for the German fat economy.
38. Ivanovszky, L.
Petroleum (London) 5, 133 (1942)
Natural gas; possibilities of exploitation in Great Britain.

39. Karzhavin, V. A.
Ind. Eng. Chem. 28, 1042 (1936)
Natural gas. Conversion to carbon monoxide and hydrogen.
40. Klyukvin, N. A. and Klyukvin, S. S.
Natural Gases (USSR) No. 8, 52 (1934)
Preparation of ethylene from methane.
41. Komarewsky, V. I. and Riesz, C. H.
(Illinois Institute of Technology)
National Pet. News 37, No. 6, R-97 (1945)
The Fischer-Tropsch synthesis and the petroleum industry.
42. Kunkel, J. H.
Petroleum Engineer 16, No. 5, 74 (1945)
Engineering aspects of the new Utah Oil Refining Company 100-octane plant.
43. Leibush, A. G. and Bergs, G. Y.
(State Nitrogen Inst.)
J. Applied Chem. (USSR) 13, 1003 (1940)
The interaction of methane with steam. II. The rate of the reaction of the interaction of methane with steam.
44. Natta, G. and Piontelli, R.
Chimica e industria (Italy) 18, 623 (1936)
Methane in the production of hydrogen.
45. Newman, L. L.
(Bur. of Mines, Washington, D. C.)
Ind. Eng. Chem. 40, 559-82 (1948)
Oxygen in the production of H_2 or synthesis gas.
46. Ogawa, T., Matir, A., Nagai, H. and Seno, H.
J. Soc. Chem. Ind. (Japan) 43, 139 (1939)
Oxidation of methane. III. Apparatus heated by internal combustion.
47. Ogura, T. and Huzemura, T.
J. Chem. Soc. (Japan) 60, 139 (1939)
Reaction between methane and steam.
48. Ogura, T.
J. Soc. Chem. Ind. (Japan) 43, (Suppl. binding) 168 (1940)
Semi-industrial experiments on the preparation of hydrogen from Formosan natural gas. I.
49. Ogura, T.
Bull. Chem. Soc. Japan 16, 262 (1941) - in German
Study of the oxidation of methane.
50. Rakovskii, E. V. and Burinova, O. A.
(Moscow Chemico-Technological Institute)
J. Applied Chem. (USSR) 14, 449 (1941)
Obtaining hydrogen by the conversion of hydrocarbons by water vapor.

51. Randell, M. and Gerard, F. W.
(Univ. of California)
Ind. and Eng. Chem. 20, 1335 (1928)
Synthesis of methane from carbon dioxide and hydrogen.
52. Reitmeier, R. E., Atwood, K., Bennett, H. A. Jr., and Baugh, H. M.
(Girdler Corp., Louisville, Ky.)
Ind. Eng. Chem. 40, 620-6 (1948)
Production of synthesis gas by reaction of light hydrocarbons with steam and CO₂.
53. Schode, H. A., Foran, E. and Aldrich, R. C.
Chimie and industrie 55, 331-4 (1946)
Application of the Fischer-Tropsch process at the Lutz Rendorf plant of the Windershall Company.
54. Schmidt, J. and Neumann, B.
Z. Elektrochem. 38, 925 (1932)
On the equilibria methane-carbon dioxide and carbon monoxide-hydrogen.
55. Seelig, H. S. and Marchner, R. F.
(Standard Oil Co. (Ind.) Whiting, Indiana)
Ind. Eng. Chem. 40, No. 4, 583-6 (1948)
Production of synthesis gas by catalytic decomposition of methanol.
56. Spencer, W. D.
Petroleum 7, No. 7, 90 (1944)
Science of coal to oil conversion. IV. The Fischer-Tropsch synthesis.
57. Storch, H. H.
J. Wiley and Sons, New York (1945)
Chemistry of Coal Utilization (Lowry), Chapter 39, Synthesis of hydrocarbons from water-gas.
58. Tsutsumi, S.
J. of Fuel Soc. of Japan 17, 24 (1938) - in English
The production of carbon monoxide and hydrogen by means of the methane-steam reaction.
59. Wright, C. C., Barclay, K. M. and Mitchell, R. F.
(State College, Pa.; The Consolidated Mining and Smelting Co. of Canada, Ltd., Trail, B. C.)
Ind. Eng. Chem. 40, 592-600 (1948)
Production of H₂ and synthesis gas by the oxygen gasification of solid fuel.
60. Zhemochkin, M. N.
Lesokhim. Prom. 2, No. 9, 12 (1939)
The utilization of the permanent gases from the dry distillation of wood for organic synthesis.
61. United States Patent 2,010,427 (August 6, 1935)
J. F. Eversole (to Carbide and Carbon Chemical Corp.)
62. United States Patent 2,238,367 (April 15)
J. Mohr and E. Lagelbauer
Treating waste materials such as garbage and trash.

III - Purification of the Synthesis Gas

63. Ames, C. B.
Mines Magazine 32, No. 10, 508 (1942)
64. Anon.
Steel 114, No. 6, 143 (1944)
65. Atwell, H. V., Powell, A. R. and Storch, H. H.
Technical Oil Mission Report No. 15, July 19, 1945
Office of Publication Board Report No. 2051
Department of Commerce, Washington, D. C.
66. Atwell, H. V. and Schroeder, W. C.
Technical Oil Mission Report, No. 8, May 15, 1945
67. Berthelot, C.
Genie Civil 115, 461 (1939)
Conversion of methane and carbon monoxide. Process of the Societe Belge de l'Azote at Renory.
68. Blohm, C. L. and Chapin, W. F.
Oil Gas J. 47, No. 26, 75-7, 81-5 (1948)
Purification and dehydration of gases.
69. Christian, D. C.
Gas Age 92, No. 9, 59 (1943)
70. Eidus, Ia. T. and Zelinskii, N. D.
Bull. Acad. Sci. (USSR) Chem. Series 45 (1942)
71. Fischer, F.
Oel u Kohle in Gemeinschaft mit Brennst.-Chem. 39, 517-22 (1943)
Review of the syntheses using CO and H.
72. Funasaka, W.
J. Soc. Chem. Ind. Japan 43, (Suppl. binding) 200-3, 203-6 (1940)
Benzine synthesis from CO and H₂.
73. Funasaka, W.
J. Soc. Chem. Ind. (Japan) 43, 482 (1940)
The benzine synthesis from carbon monoxide and hydrogen.
74. Funasaka, W.
Sci. Papers Inst. Phys. Chem. Research (Tokyo) 35, 32 (1938)
75. Funasaka, W.
Sci. Papers Inst. Phys. Chem. Research (Tokyo) 37, 323-30 (1940) - in German
The benzine synthesis from CO and H. Removal of organic sulfur compounds from water-gas.
76. Funasaka, W. and Tojo, I.
J. Soc. Chem. Ind. (Japan) 46, 402-3 (1943)
LXVII. The desulfurizing ability of various metal hydroxides. LXVIII. Analysis of the synthetic oil by fractional distillation.

77. Hall, C. C. and Powell, A. R.
Office of Publication Board Report No. 286
Dept. of Commerce, Washington, D. C.
78. Howat, D. D.
Chem. Age (London) 44, 57-60 (1941)
Synthesis of oils from industrial gases. The Fischer-Tropsch and allied processes.
79. Huff, W. J. and Logan, L.
Proc. of the Am. Gas Association 724 (1936)
80. Lorenzen, G. and Leithe, F.
Gas u. Wasserfach 86, 313 (1943)
81. Milbourne, C. F.
Gas 20, No. 12, 28 (1944)
82. Roelen, O.
Brennst.-Chem. 12, 305 (1931)
83. Sands, A. E., Wainwright, H. W. and Schmidt, L. D.
(U.S. Bureau of Mines, Morgantown, W. Va.)
Ind. Eng. Chem. 40, 607-20 (1948)
Purification of synthesis gas produced from pulverized coal. Specifications, purification processes, analytical methods.
84. Schade, H. A., Foran, E. and Aldrich, R. C.
Office of Publication Board Report No. 373
Department of Commerce, Washington, D. C.
85. Seil, G. E.
Am. Gas Assoc. 1943, New York
Dry Box Purification of Gas with Annotated Bibliography - pp. 1032-67.
86. Storch, H. H.
J. Wiley and Sons, New York (1945)
Chemistry of Coal Utilization (Lowry), Chapter 39, Synthesis of hydrocarbons from water-gas.
87. Tsuneoka, S. and Fujimura, K.
J. Soc. Chem. Ind. (Japan) 37, (Suppl. binding) 704 (1934)
The effect of diluent on hydrocarbon synthesis.
88. Tsuneoka, S. and Funasaka, W.
J. Soc. Chem. Ind. (Japan) 41, (Suppl. binding) 43 (1938)
89. Turner, C. F.
Oil and Gas J. 43, No. 20, 191 (1944)
90. Underwood, A. J. V.
Ind. and Eng. Chem. 32, No. 4, 449 (1940)
91. British Patent 254,288 (1925)
F. Fischer and H. Tropsch
92. British Patent 259,885 (1927)
F. Fischer

93. British Patent 282,634 (1926)
F. Fischer
94. British Patent 469,933 (1937)
(To Studien-und Verwertungs - G. m. b. H.)
95. German Patent 558,558 (1926)
F. Fischer
96. German Patent 651,462 (1937)
O. Roelen and W. Feisst
97. United States Patent 1,695,130 (1928)
(To I. G. Farbenindustrie-A.G.)
98. United States Patent 1,757,826 (1930)
(To Commercial Solvents Corp.)
99. United States Patent 1,891,974 (1932)
F. Fischer
100. United States Patent 2,110,240-1 (1938)
O. Roelen and W. Feisst
101. United States Patent 2,239,000 (1941)
(To Celanese Corporation of America)
102. United States Patent 2,310,784 (1943)
W. Herbert (Vested in Alien Property Custodian)

IV - Reaction Conditions

103. Aicher, A., Myddleton, W. and Wolker, J.
(Bindley Processes, Ltd. Surrey, England)
J. Soc. Chem. Ind. 54, 313 T (1935)
The production of hydrocarbon oils from industrial gases. I.
104. Atwell, H. V., Powell, A. R. and Storch, H. H.
Technical Oil Mission Report No. 5, July 19, 1945
Office of Publication Board Report No. 2051
Department of Commerce, Washington, D. C.
105. Bruner, F. H.
(The Texas Co., Beacon, N. Y.)
Ind. and Eng. Chem. 41, No. 11, 2511-5 (1949)
Synthetic gasoline from natural gas.
106. Fischer, F.
(The Institute for Coal Research, Mülheim, Ruhr, Germany)
Pet. Refiner 23, No. 2, 112 (1944); Translated from Brennst.-Chemie
16, 1-11 (1935)
107. Fischer, F. and Kuster, H.
Brennst.-Chem. 14, 3 (1933)
108. Fischer, F. and Pichler, H.
Brennst.-Chem. 20, 41 (1939)

109. Fischer, F., Pichler, H. and Dienst, W.
Breenst.-Chem. 20, 221-8 (1939)
Approach to theoretically possible yields in the Fischer-Pichler intermediate-pressure synthesis.
110. Galumbic, N.
U.S. Bureau of Mines, Rept. Invest. No. 4467, 58 pp. (1949)
Some chemicals from synthetic liquid fuel processes.
111. Haensel, V.
Technical Oil Mission Report No. 9, June 15, 1945
Office of Publication Board, Report No. 284
Department of Commerce, Washington, D. C.
112. Hall, C. C.
(Fuel Res. Sta., Greenwich, England)
Chemistry and Industry 67-75 (1947)
The operation and development of the Fischer-Tropsch and similar processes in Germany.
113. Howat, D. D.
Chem. Age (London) 44, 57-60 (1941)
Synthesis of oils from industrial gases. The Fischer-Tropsch and allied processes.
114. Lane, J. C. and Weil, B. H.
(Georgia School of Technology; Gulf Res. and Dev. Co., Pittsburgh, Pa.)
Pet. Refiner 25, No. 9, 423-34 (1947)
Synthine process II. The catalytic synthesis including catalysts and reaction mechanisms.
115. Martin, F.
Chem. Fabrik 12, 233 (1939)
116. Murata, Y. and Tsuneoka, S.
Sci. Papers Inst. Phys. Chem. Research (Tokyo) 34, 99 (1937)
117. Riesz, C. H., Lister, F., Smith, L. G. and Komarewsky, V. I.
(Inst. of Gas Tech., Chicago; Illinois Inst. of Tech., Chicago)
Ind. Eng. Chem. 40, 718 (1948)
Catalysts for the hydrocarbon synthesis.
118. Spencer, W. D.
Petroleum 7, No. 7, 90 (1944)
Science of coal to oil conversion. IV. The Fischer-Tropsch synthesis.
119. Storch, H. H.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
Ind. Eng. Chem. 37, 340-51 (1945)
Catalysis in synthetic liquid fuels processes.
120. Storch, H. H.
The Crucible 31, No. 2, 52 (1946)
121. Tahara, H., Sawade, Y. and Komiyama, D.
Sci. Papers Inst. Phys. Chem. Research (Tokyo) 38, 184-95 (1941) - in German
The catalytic reaction of carbon monoxide and hydrogen under high pressure. II. The influence of high pressure on the iron catalyst employed in the synthesis of benzine.

122. Tsuneoka, S. and Fujimura, K.
J. Soc. Chem. Ind. (Japan) 37, (Suppl. binding) 463 (1934)
123. Tsuneoka, S. and Murata, Y.
J. Soc. Chem. Ind. (Japan) 37, (Suppl. binding) 711 (1934)
124. Tsuneoka, S. and Murata, Y.
J. Soc. Chem. Ind. (Japan) 40, (Suppl. binding) 478 (1937)
125. Tsuneoka, S. and Nishio, A.
Sci. Papers, Inst. Phys. Chem. Research (Tokyo) 34, 83 (1937)
126. Tsuneoka, S. and Nishio, A.
J. Soc. Chem. Ind. (Japan) 41, (Suppl. binding) 11 (1938)
127. Wanatabe, S.
J. Soc. Chem. Ind. (Japan) 46, 1128-30 (1943)
128. Wanatabe, S., Morikawa, K. and Igawa, S.
J. Chem. Soc. (Japan) 38, (Suppl. binding) 328 (1935)
129. Wanatabe, S., Morikawa, K. and Igawa, S.
J. Soc. Chem. Ind. (Japan) 46, 967-71 (1943)
130. Weller, S.
U.S. Bureau of Mines Repts. Invest. No. 4405, 8 pp. (1949)
Effect of operating variables on Fischer-Tropsch synthesis.

V - Heat Removal

131. Anon.
British Coal Utilization and Research Association 8, (1944)
132. Atwell, H. V. and Schroeder, W. C.
Technical Oil Mission Report, No. 8, May 15, 1945
133. Atwell, H. V., Powell, A. R. and Storch, H. H.
Technical Oil Mission Report No. 5, July 19, 1945
Office of Publication Board Report No. 2051
Department of Commerce, Washington, D. C.
134. Brinkley, S. R. Jr.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
J. Applied Physics, 18, 582-5 (1947)
Heat transfer between a fluid and a porous solid generating heat.
135. Cotton, E.
(Gulf Oil Corp.)
Natl. Pet. News 38, No. 23, R 264 (1946)
Latest developments and operating procedures in Fischer-Tropsch process.
136. Fischer, F., Pichler, H. and Lohman, W.
Brennst.-Chem. 20, 247-50 (1939)
Synthesis of kogasin and paraffin wax in the aqueous phase.
137. Fischer, F. and Tropsch, H.
Brennst.-Chem. 4, 276-85 (1923)

138. Grimm, W.
Chem. Trade J. 117, 289 (1945)
139. Hall, C. C.
(Fuel Res. Sta., Greenwich, England)
Chemistry and Industry 67-75 (1947)
The operation and development of the Fischer-Tropsch and similar processes in Germany.
140. Herbert, W. and Ruping, H.
Chem. Fabrik 149-53 (1940)
The recovery with activated carbon of benzine and gas oil from the residual gases from the synthesis of benzine by the Fischer-Tropsch Ruhrchemie process.
141. Holroyd, R.
(British Ministry of Fuel and Power)
U.S. Bureau of Mines Circ. 7375, 75 pp. (1946)
Report on investigation by fuels and lubricants at the I. G. Farbenindustrie A.G. Works, Ludwigshafen and Oppau.
142. Howat, D. D.
Chem. Age (London) 44, 57-60 (1941)
Synthesis of oils from industrial gases. The Fischer-Tropsch and allied processes.
143. Storch, H. H. et al.
U. S. Bureau of Mines Tech. Paper 709 (1948)
Influences on cobalt catalyst operation.
144. British Patent 449,274 (June 24, 1936)
(to I. G. Farbenindustrie-A.G.)
145. British Patent 536, 169 (May 1941)
(International Hydrocarbon Synthesis Co.)
146. British Patent 567,609 (February 1945)
(International Hydrocarbon Synthesis Co.)
147. French Patent 855,378 (May 9, 1940)
(International Hydrocarbon Synthesis Co.)
148. German Patent 734,218 (March 1943)
G. Wirth
149. German Patent 741,280 (September 1943)
H. Aureden
150. German Patent 741,826 (January 1939)
151. United States Patent 2,148,545
H. Dorndorf, M. Kelting and H. Tramm
152. United States Patent 2,248,734 (July 8, 1941)
F. T. Barr
153. United States Patent 2,250,421 (July 22)
E. W. Riblett (to the M. W. Kellogg Co.)

154. United States Patent 2,256,622 (September 23)
E. V. Murphree and D. B. Peck (to Standard Oil Development Co.)
155. United States Patent 2,266,161 (December 16, 1941)
D. L. Campbell and F. T. Barr
156. United States Patent 2,287,092 (June 23, 1942)
F. Duftschmid, E. Kinckh and F. Winkler
157. United States Patent 2,309,034 (January 19)
F. T. Barr (to Standard Catalytic Co.)
158. United States Patent 2,347,682 (May 2, 1944)
R. G. Gunness (to Standard Oil Co. of Ill.)
159. United States Patent 2,393,240 (January 22, 1946)
H. Dreyfus

VI - Individual Catalysts

Theoretical

160. Balandin, A. A. and Eidus, Ia. T.
(Acad. Sci. USSR, Inst. Org. Chem.)
Compt. rend. (Doklady) Acad. Sci. URSS 49, 655-7 (1945) - in English
Principles of conservation of the valence angle in the multiplet theory of catalysis.
161. Braude, G., Shurmovskaia, N. and Bruns, B.
J. Phys. Chem. (USSR) 22, No. 4, 483-6 (1948)
The kinetics and mechanism of catalytic hydrogenation of carbon monoxide.
I. The method of preparation of metallic catalysts from their oxides and the operation with them without contact with air.
162. Braude, G., Shurmovskaia, N. and Bruns, B.
(State Inst. of the Nitrogen Industry, Lab. of Catalysis, Moscow)
J. Phys. Chem. (USSR) 22, No. 4, 487-94 (1948)
The kinetics and mechanism of catalytic hydrogenation of CO. II. Iron carbide formation during the hydrogenation of CO with an Fe catalyst.
163. Chakravanty, K. M. and Sen, R.
(Dacca Univ. and Indian Assoc. for the Cultivation of Sci., Calcutta)
Nature 160, 907-8 (1947)
X-ray diffraction studies of a Ni-Thoria-kieselguhr catalyst for Fischer-Tropsch synthesis.
164. Fischer, F.
(The Inst. for Coal Research, Mülheim, Ruhr, Germany)
Pet. Refiner 23, No. 2, 112 (1944); Translated from Brennst.-Chem. 16, 1-11 (1935)
165. Galumbic, N.
U. S. Bureau of Mines Rept. Invest. No. 4467, 58 pp. (1949)
Some chemicals from synthetic liquid fuel processes.

156. Hall, C. C.
(Fuel Res. Sta., Greenwich, England)
Chemistry and Industry 67-75 (1947)
The operation and development of the Fischer-Tropsch and similar processes in Germany.
157. Herington, E. F. G. and Rideal, E. K.
(Dept. of Colloid Science, Cambridge Univ.)
Trans. Faraday Soc. 40, 505-16 (1944)
Poisoning of metallic catalysts.
168. Khvatov, A. D.
(Inst. of Chemistry, Moscow State University)
J. Gen. Chem. (USSR) 2, 819 (1939)
The relationship between the energy of activation and the activity of the catalysts.
169. Kobozev, N. I.
(Moscow State University)
Acta Physicochim. (USSR) 2, No. 6, 805-44 (1938)
170. Kobozev, N. I.
J. Phys. Chem. (USSR) 19, No. 3, 142 (1945)
The principle of aggravation and the structural classification of catalysts.
171. Kobozev, N. I.
(Lomonosov-Moscow State Univ., Lab. of Catalysis and Electrochemistry of Gases)
Acta Physicochim. (USSR) 21, No. 5, 943 (1946) - in English
The aggravation principle and structural classification of catalysts.
172. Natta, G.
Bull. soc. chim., France, D 161-6 (1949)
Solid state reactions in the formation and aging of catalysts.
173. Riesz, C. H., Lister, F., Smith, L. and Komarewsky, V.
Ind. Eng. Chem. 40, 718-22 (1948)
174. Roginskii, S. Z.
(Leningrad Inst. of Chem. Phys.)
J. Phys. Chem. (USSR) 15, No. 1, 1 (1941)
Active contacts, their formation and nature. I. On the nature of the active surface.
175. Roginskii, S. Z.
J. Applied Chem. (USSR) 17, No. 3, 97 (1944)
Theoretical bases of catalyst preparations.
176. Roginskii, S. Z.
Bull. of the USSR Acad. of Sci. (Chem. Ser.) No. 4, 383, (1948)
The bar and concentration isotherms of poisoning of catalysts by blocking.

177. Roginskii, S. Z.
(Inst. of Phys. Chem., Acad. of Sci. USSR)
Bull. of the USSR Acad. of Sci. (Chem. Ser.) No. 5, 493 (1948)
The poisoning of catalyst by blocking at non-correlated absorption of poison.
178. Roginskii, S. Z.
J. Phys. Chem. (USSR) 22, No. 6, 655-68 (1948)
The poisoning of a catalyst by blocking.
179. Roginskii, S. Z.
J. Phys. Chem. (USSR) 22, No. 6, 669-82 (1948)
The blocking of catalyst during a coordinated distribution of the contact poison.
180. Shekhter, A., Roginskii, S. Z. and Isaev, B.
Acta Physicochim. (USSR) 20, No. 2, 217 (1945)
Electron microscopical investigation of catalysts. I. Asbestos as a carrier.
181. Sips, R.
J. Chem. Phys. 16, 490 (1948)
On the structure of a catalyst surface.
182. Tatanskii, S. V., Papok, K. K. and Semenido, E. G.
Neftyanoe Kohz. 24, No. 2, 52-5 (1946)
Catalysts for obtaining synthetic fuels from coal.
183. Teichner, S.
Compt. rend. 227, 478-80 (1948)
Development of the specific surface of Fischer catalysts during reduction.
184. Wright, S. R., Dimrock, W. R. and Davis, S. G.
(Univ. of Alberta, Canada)
Can. Chem. Process Inds. 32, No. 1, 53-4, 57 (1948)
Evaluation of catalysts used in the synthesis of hydrocarbons.

Cobalt Catalysts

185. Aldrich, R. C. (Lt. USNR)
Natl. Petroleum News 37, No. 45, R 922-4 (1945)
Manufacture and regeneration of Fischer-Tropsch catalyst.
186. Anderson, R. B., Hall, W. K., Hewlett, H. and Siligman, B.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
J. Am. Chem. Soc. 69, 3114-19 (1947)
The Fischer-Tropsch synthesis. II. Properties of unreduced cobalt catalysts.
187. Anderson, R. B., Hall, W. K. and Hofer, L. J. E.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
J. Am. Chem. Soc. 70, 2465-72 (1948)
Fischer-Tropsch synthesis. IV. Properties of reduced cobalt catalyst.

188. Anderson, R. B., Krieg, A., Siligman, B. and O'Neill, W. E.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
Ind. Eng. Chem. 39, 1548-54 (1947)
The Fischer-Tropsch synthesis; test of cobalt catalyst at atmospheric pressure.
189. Anderson, R. B., Krieg, A., Siligman, B. and Tarn, W.
(U.S. Bureau of Mines, Pittsburgh, Pa.)
Ind. Eng. Chem. 40, 2347-50 (1948)
Fischer-Tropsch cobalt catalysts.
190. Appleyard, K. C.
Colliery Guardian 158, 865 (1939)
The production of oil from coal by the Fischer-Tropsch process.
191. Atwell, H. V., Powell, A. R. and Storch, H. H.
Technical Oil Mission Report No. 5, July 19, 1945
Office of Publication Board Report No. 2051
Department of Commerce, Washington, D. C.
192. Cotton, E.
(Gulf Oil Corp.)
Natl. Pet. News 38, No. 23, R 264 (1946)
Latest developments and operating procedures in Fischer-Tropsch process.
193. Craxford, S. R.
(Fuel Res. Sta., Greenwich, England)
Trans. Faraday Soc. 42, 576-80 (1946)
Mechanism of the Fischer-Tropsch reaction.
194. Craxford, S. R.
(Fuel Res. Sta., Greenwich, England)
Fuel 26, No. 6, 119-23 (1947)
The chemistry of the Fischer-Tropsch synthesis.
195. Eidus, Ia. T.
(Inst. of Organic Chem., Acad. of Sci., USSR)
J. Gen. Chem. (USSR) 16, No. 6, 869-74 (1946)
The synthesis of liquid and solid hydrocarbons from water gas at atmospheric pressure on a precipitated Fe-Cu-ThO₂-K₂CO₃-marshelite contact.
196. Fischer, F.
(The Inst. for Coal Research, Mulheim, Ruhr, Germany)
Pet. Refiner 23, No. 2, 112 (1944); Translated from Brennst.-Chem. 16, 1-11 (1945)
197. Fischer, F. and Koch, H.
Brennst.-Chem. 13, 61-68 (1932)
Synthesis of benzine.
198. Fujimura, K. and Tsuneoka, S.
J. Soc. Chem. Ind. (Japan) 36, (Suppl. binding) 119, 413 (1933)

199. Ghosh, J. C. and Bosak, N. G.
Pet. (London) 11, 131-2, 146 (1948)
Chromium oxide as a catalyst promoter for Fischer-Tropsch synthesis at medium pressures.
200. Ghosh, J. C. and Sastry, S. L.
(Ind. Inst. Sci., Bangalore)
Nature 156, 506-7 (1945)
 Cr_2O_3 as a promoter in catalysts for Fischer-Tropsch synthesis.
201. Golumbic, N. R.
U. S. Bur. of Mines, Infor. Circ. 7366, (1946)
Review of the Fischer-Tropsch and related processes for synthetic liquid fuel production.
202. Hale, C. H.
Pet. Refiner 25, No. 6, 117-20 (1946)
Rapid analysis of Fischer synthesis catalyst.
203. Hall, C. C.
(Fuel Res. Sta., Greenwich, England)
Chemistry and Industry 67-75 (1947)
The operation and development of the Fischer-Tropsch and similar processes in Germany.
204. Hall, C. C. and Smith, S. L.
(Fuel Res. Sta., Greenwich, England)
J. Soc. Chem. Ind. 65, 128-36 (1946)
The life of a cobalt catalyst for the synthesis of hydrocarbons at atmospheric pressure.
205. Hamai, S.
(Central Lab., South Manchuria Railway Co., Dairen)
Bull. Chem. Soc. Japan 17, No. 7, 339-44 (1942)
Physico-chemical investigations of catalytic mechanisms. VI.
Fischer-Tropsch synthesis of hydrocarbons.
206. Hamai, S.
J. Chem. Soc. Japan 63, 1606-15 (1942)
Physico-chemical investigations of catalytic mechanisms. VII.
Durability and pretreatment of the catalyst used for the Fischer-Tropsch synthesis of hydrocarbons.
207. Hamai, S., Hayashi, S. and Shimamura, K.
(Central Lab., South Manchuria Railway Co., Dairen)
Bull. Chem. Soc. Japan 17, 252-9 (1942)
Physico-chemical investigations of catalytic mechanisms. V. Fischer-Tropsch synthesis of hydrocarbons.
208. Hamai, S., Hayashi, S. and Shimamura, K.
Bull. Chem. Soc. Japan 17, 451-61 (1942)
VIII. Fischer-Tropsch synthesis of hydrocarbons with special reference to the durability of catalyst.