**Conversion (Liquefaction and Gasification) Bibliography**

Selected References— Revised April 2021

These bibliographic references have been compiled as a TSOP project, and organic petrologists have found the references to be useful in their work. They should be available at university or geological research center libraries. They are not available from TSOP.

Abdel-Baset, M.B., R.F. Yarzab, and P.H. Given, 1978, Dependence of coal liquefaction behaviour on coal characteristics. 3. Statistical correlations of conversion in coal-tetralin interactions: Fuel, v. 57, p. 89-94.

Agapito, J.F.T., ed., 1985, Western synfuels symposium proceedings: Colorado School of Mines Press, 130 p.

Akbarzadeh, H., and R.J. Chalaturnyk, 2014, Structural changes in coal at elevated temperature pertinent to underground coal gasification: A review: International Journal of Coal Geology, v. 131, p. 126-146.

Aleksic, B.R., M.D. Ercegovac, O.G. Cvetkovic, and others, 1997, Conversion of low rank coal into liquid fuels by direct hydrogenation, in R. Gayer and J. Pesek, eds., European coal geology and technology: London, Geological Society Special Publication 125, p. 357-363.

Álvarez-Rodríguez, R., and C. Clemente-Jul, 2008, Hot gas desulphurization with dolomite sorbent in coal gasification: Fuel, v. 87, p. 3513-3521.

Anderson, L.L., 1988, Coal liquefaction kinetics, in Y. Yurum, ed., New trends in coal science: Boston, Kluwer Academic Publishers, p. 339-359.

Anderson, L.L., 1988, Catalysis of coal liquefaction, in Y. Yurum, ed., New trends in coal science: Boston, Kluwer Academic Publishers, p. 361-381.

Baldwin, R.M., 1991, Correlation of coal properties with hydroliquefaction reactivity, a brief review, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society, Symposium Series 461, p. 171-181.

Barraza, J., M. Cloke, and A. Belghazi, 1997, Improvements in direct coal liquefaction using beneficial coal fractions, in R. Gayer and J. Pesek, eds., European coal geology and technology: London, Geological Society Special Publication 125, p. 349-356.

BCRA Quarterly, 1986, Coal characteristics important for uses other than cokemaking. Part 1: combustion, gasification, liquefaction: BCRA Quarterly, v. 11, p. 44-62.

Beaver, F.W., D.J. Daly, G.H. Groenewold, C.R. Schmit, J.E. Boysen, J.M. Evans, J.R. Covell, and R.A. Kuhnel, 1991, The status and future of underground coal gasification, in R.B. Finkelman and D.C. Peters, eds., Practical applications of coal geology: Journal of Coal Quality, v. 10, no. 3, p. 116-126.

Beaver, F.W., G.H. Groenewold, C.R. Schmit, D.J. daly, and R.L. Oliver, 1991, The role of hydrogeology in underground coal gasification with an example from the Rocky mountain 1 (RM1) test, Carbon County, Wyoming, in D.C. Peters, ed., Geology in coal resource utilization: Fairfax, VA, Techbooks, p. 169-186.

Benito, A.M., M.T. Martinez, V. Cebolla, I. Fernandez, and J.L. Miranda, 1993, Hydrotreating of distillates from Spanish coal liquefaction: Erdöl und Kohle-Erdgas-Petrochemie, v. 46, no. 2, p. 78-80.

Bialecka, B., 2008, Estimation of coal reserves for UCG in the Upper Silesian coal basin, Poland: Natural Resources Research, v. 17, no. 1, p. 21-28.

Bielowicz, B., 2012, A new technological classification of low-rank coal on the basis of Polish deposits: Fuel, v. 96, p. 497-510.

Bielowicz, B., 2013, Petrographic composition of Polish lignite and its possible use in a fluidized bed gasification process: International Journal of Coal Geology, v. 116-117, p. 236-246.

Bielowicz, B., and J.R. Kasiński, 2014, The possibility of underground gasification of lignite from Polish deposits: International Journal of Coal Geology, v. 131, p. 304-318; v. 139, p. 191-205.

Bielowicz, B., 2016, Petrographic characteristics of lignite gasification chars: International Journal of Coal Geology, v. 168, p. 146-161.

Bosse, R., H. Heidecke, and H.H. Oelert, 1991, Liquefaction potential of South African torbanite coal, II. Coprocessing in blended solvent and technical petroleum vacuum residue: Erdöl und Kohle-Erdgas-Petrochemie, v. 44, no. 11, p. 418-420.

Brodzki, D., A.A. Akar, G.D. Mariadassou, C.Z. Li, B. Xu, and R. Kandiyoti, 1994, Liquefaction of coal and maceral concentrates in a stirred micro-autoclave and a flowing-solvent reactor: Fuel, v. 73, p. 1331f

Bunt, J.R., J.P. Joubert, and F.B. Waanders, 2008, Coal char temperature profile estimation using optical reflectance for a commercial-scale Sasol-Lurgi FBDB gasifier: Fuel, v. 87, p. 2849-2855.

Bunt, J.R., and F.B. Waanders, 2008, An understanding of lump coal physical property behaviour (density and particle size effects) impacting on a commercial-scale Sasol-Lurgi FBDB gasifier: Fuel, v. 87, p. 2856-2865.

Bunt, J.R., N.J. Wagner, and F.B. Waanders, 2009, Carbon particle type characterization of the carbon behavior impacting on a commercial-scale Sasol-Lurgi FBDB gasifier: Fuel, v. 88, p. 771-779.

Burgess, C.E., and H.H. Schobert, 1998, Relationship of coal characteristics determined by pyrolysis/gas chromatography/mass spectrometry and nuclear magnetic resonance to liquefaction reactivity and product composition: Energy & Fuels, v. 12, p. 1212-1222.

Burton, E., J. Friedmann, and R. Upadhye, 2007, Best practices in underground coal gasification: Lawrence Livermore National Laboratory, Technical Report W-7405-Eng-48, 119 p.

Campbell, J.D., and M.P. du Plessis, 1983, Alberta Plains coal regions: potential feedstock for coal conversion by liquefaction and pyrolysis: Alberta Research Council, Information Series 101, 21 p.

Carpenter, A.M., 1988, Coal classification: London, IEA Coal Research, IEACR/12, 104 p. (liquefaction, p. 64-77)

Cerny, J., G. Sebor, J. Blazek, and D. Maxa, 1995, Coal structure and coal reactivity under liquefaction conditions: Erdöl und Kohle-Erdgas-Petrochemie, v. 48, nos. 4/5, p. 182-185.

Chaffee, A.L., G. Lay, M. Marshall, W.R. Jackson, Y. Fei, T.V. Verheyen, P.J. Cassidy, and S.G. Scott, 2010, Structural characterization of Middle Jurassic, high-volatile bituminous Walloon Subgroup coals and correlation with the coal seam gas content: Fuel, v. 89, p. 3241-3249.

Chakrabartty, S.K., and M.P. du Plessis, 1985, Evaluation of Alberta Plains coals for pyrolysis and liquefaction processes: Alberta Research Council, Coal Report 85-1, 24 p.

Chen, Y.G., J.S. Gao, and H.H. Oelert, 1988, Coprocessing of Chinese bituminous coals. 1. Survey: Erdöl und Kohle-Erdgas-Petrochemie, v. 41, no. 7-8, p. 300-302.

Clemens, T., D. Gong, and S. Pearce, 2006, Study on the suitability of New Zealand coals for hydrogen production: International Journal of Coal Geology, v. 65, p. 235-242.

Collot, A.-G., 2006, Matching gasification technologies to coal properties: International Journal of Coal Geology, v. 65, p. 191-212.

Cornett, M.S., 1993, Coal gasification: Journal of Coal Quality, v. 12, no. 1, p. 14-18.

Crelling, J.C., and R.J. Gray, 2001, Some industrial applications of organic petrology: TSOP Newsletter, v. 18, no. 2, p. 10-14.

Croft, G.D., and T.W. Patzek, 2009, Potential for coal-to-liquids conversion in the U.S.–Resource base: Natural Resources Research, v. 18, no. 3.

Cronauer, D.C., R.G. Ruberto, R.S. Silver, R.G. Jenkins, I.M.K. Ismail, and D. Schlyer, 1983, Liquefaction of partially dried and oxidized coals: 1. Coal drying and oxidation: Fuel, v. 62, p. 1116-1123.

Cronauer, D.C., R.G. Ruberto, R.G. Jenkins, A. Davis, P.C. Painter, D.S. Hoover, M.E. Starsinic, and D. Schlyer, 1983, Liquefaction of partially dried and oxidized coals: 2. Coal characteristics: Fuel, v. 62, p. 1124-1132.

Cronauer, D.C., R.G. Ruberto, R.S. Silver, R.G. Jenkins, A. Davis, and D.S. Hoover, 1984, Liquefaction of partially dried and oxidized coals: 3. Liquefaction results: Fuel, v. 63, p. 71-77.

Cudmore, J.F., 1984, Coal utilization, in C.R. Ward, ed., Coal geology and coal technology: Boston, Blackwell Scientific Publications, p. 113-150.

Davis, A., W. Spackman, and P.H. Given, 1976, The influence of the properties of coals on their conversion into clean fuels: Energy Sources, v. 3, no. 1, p. 55-81.

Davis, A., G.D. Mitchell, F.J. Derbyshire, R.F. Rathbone, and R. Lin, 1991, Optical properties of coals and liquefaction residues as indicators of reactivity: Fuel, v. 70, p. 352-360.

Davis, B.H., and J.C. Hower, 2017, Coal technology for power, liquid fuels, and chemicals, in J.A. Kent and others, eds., Handbook of industrial chemistry and biotechnology: Springer International Publishing, p. 107-183.

Derbyshire, F.J., A. Davis, and R. Lin, 1991, Two-component concept of coal structure, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society Symposium Series 461, p. 72-88.

Derbyshire, F., and T. Hager, 1994, Coal liquefaction and catalysis: Fuel, v. 73, p. 1087f

Diessel, C.F.K., and R.E. Guyot, 1985, Petrographic studies on solid residues derived from the hydrogenation of some Australian coals, in A.T. Cross, ed., Economic geology: coal, oil and gas: Neuvieme Congres International de Stratigraphie et du Geologie du Carbonifere, Compte Rendu, v. 4, Southern Illinois University Press, p. 573-580.

Douglas, P.L., S.C. Lythgoe, and S.K. Mallik, 1994, Coal liquefaction modeling: 1) development of a kinetic model, 2) parameter estimation: Fuel, v. 73, p. 531, 542.

Eftekhari, A.A., K.H. Wolf, J. Rogut, and H. Bruining, 2015, Mathematical modeling of alternating injection of oxygen and steam in underground coal gasification: International Journal of Coal Geology, v. 150-151, p. 154-165.

Ekinci, E., M. Tolay, K.D. Bartle, and N. Taylor, 1988, Rapid characterization of lignite liquefaction products: Erdöl und Kohle-Erdgas-Petrochemie, v. 41, no. 7-8, p. 303-305.

Everson, R.C., H.W.J.P. Neomagus, R. Kaitano, R. Falcon, C. van Alphen, and V.M. du Cann, 2008, Properties of high ash char particles derived from inertinite-rich coal: 1. Chemical, structural and petrographic characteristics: Fuel, v. 87, p. 3082-3090.

Figueiredo, J.L., and J.A. Moulijn, eds., 1986, Carbon and coal gasification: Boston, Martinus Nijhoff Publishers, NATO ASI Series E, Applied Sciences No. 105, 655 p.

Fisher, C.H., G.C. Sprunk, A. Eisner, H.J. O’Donnell, L. Clarke, and H.H. Storch, 1942, Hydrogenation and liquefaction of coal, part 2—effect of petrographic composition and rank of coal: U.S. Bureau of Mines, Technical Paper 642, 162 p.

Furimsky, E., L. Zheng, F. Boudreau, and G. Kovacik, 1993, Entrained bed gasification of coal. Prediction of contaminant levels using thermodynamic calculations: Erdöl und Kohle-Erdgas-Petrochemie, v. 46, no. 10, p. 379-385.

Gagarin, S.G., and A.A. Krichko, 1992, The petrographic approach to coal liquefaction: Fuel, v. 71, p. 785f

Gao, W., R. Zagorščak, and H.R. Thomas, 2021, Insights into solid-gas conversion and cavity growth during underground coal gasification (UCG) through Thermo-Hydraulic-Chemical (THC) modelling: International Journal of Coal Geology, v. 237, 103711.

Gentzis, T., F. Goodarzi, and R.A. McFarlane, 1992, Molecular structure of reactive coals during oxidation, carbonization and hydrogenation—an infrared photoacoustic spectroscopic and optical microscopic study: Organic Geochemistry, v. 18, p. 249-258.

Gentzis, T., H. Hirosue, and T. Sakaki, 1996, Relationship between density and swelling ratio in a subbituminous and a high-volatile bituminous coal: Energy Sources, v. 18, p. 119-129.

Gentzis, T., H. Hirosue, and T. Sakaki, 1996, Effect of rank and petrographic composition on the swelling behavior of coals: Energy Sources, v. 18, p. 131-141.

Given, P.H., D.C. Cronauer, W. Spackman, H.L. Lovell, A. Davis, and B. Biswas, 1975, Dependence of coal liquefaction behaviour on coal characteristics. 1. Vitrinite-rich samples: Fuel, v. 54, p. 34-39.

Given, P.H., D.C. Cronauer, W. Spackman, H.L. Lovell, A. Davis, and B. Biswas, 1975, Dependence of coal liquefaction behaviour on coal characteristics. 2. Role of petrographic composition: Fuel, v. 54, p. 40-49.

Given, P.H., R.N. Miller, N. Suhr, and W. Spackman, 1975, Major, minor, and trace elements in the liquid product and solid residue from catalytic hydrogenation of coals, in S. Babu, ed., Trace elements in fuel: American Chemical Society, Advances in Chemistry Series 141, p. 188-191.

Given, P.H., W. Spackman, A. Davis, and R.G. Jenkins, 1980, Some proved and unproved effects of coal geochemistry on liquefaction behavior with emphasis on U.S. coals, in D.D. Whitehurst, ed., Coal liquefaction fundamentals: Washington, D.C., American Chemical Society, Symposium Series 139, p. 3-34.

Given, P.H., S. Spackman, A. Davis, and R.G. Jenkins, 1982, Some proved and unproved effects of coal geochemistry on liquefaction behavior with emphasis on U.S. coals, in D.D. Whitehurst, and others, eds., Liquefaction fundamentals: American Chemical Society, Symposium Series 139, p. 3-34.

Golitsyn, M.V., I.V. Yeremin, and V.F. Cherepovskiy, 1983, Coals for synthetic-fuel production: International Geology Review, v. 25, no. 11, p. 1319-1327.

Gorin, E., 1981, Fundamentals of coal liquefaction, in M.A. Elliott, ed., Chemistry of coal utilization, second supplementary volume: New York, John Wiley and Sons, p. 1845-1918.

Graham, U.M., J.C. Hower, R.F. Rathbone, and M.M. Spears, 1994, Pyrolysis processing characteristics of Kentucky cannel coals: Organic Geochemistry, v. 22, p. 33-37.

Grainger, L., and J. Gibson, 1981, Coal utilization: technology, economics and policy: London, Graham and Trotman Ltd., 503 p.

Gray, D., G. Barrass, J. Jezko, and J.R. Kershaw, 1980, South African coals and their behavior during liquefaction, in D.D. Whitehurst, ed., Coal liquefaction fundamentals: Washington, D.C., American Chemical Society, Symposium Series 139, p. 35-51.

Gray, D., G. Barrass, J. Jezko, and J.R. Kershaw, 1980, Relations between hydroliquefaction behavior and the organic properties of a variety of South African coals: Fuel, v. 59, p. 146-150.

Hagermann, R., K.J. Hüttinger, J.F. Lambertz, and L. Schrader, 1990, Kinetic studies on gasification of Rheinische brown coal: influence of pressure, temperature, and mineral matter: Erdöl und Kohle-Erdgas-Petrochemie, v. 43, no. 4, p. 143-144.

He, X., H. Sun, X. Chen, B. Zhao, X. Zhang, and S. Komarnei, 2018, Charging mechanism analysis of macerals during triboelectrostatic enrichment process: Insights from relative dielectric constant, specific resistivity and X-ray diffraction: Fuel, v. 225, p. 533-541. (liquefaction)

He, X., H. Sun, B. Zhao, X. Chen, X. Zhang, and S. Komarneni, 2018, Tribocharging of macerals with various materials: Role of surface oxygen-containing groups and potential difference of macerals: Fuel, v. 233, p. 759-768. (liquefaction)

Heidecke, H., and H.H. Oelert, 1991, Liquefaction potential of South African torbanite coal, 1) Basic tests for non-catalytic hydroliquefaction: Erdöl und Kohle-Erdgas-Petrochemie, v. 44, no. 4, p. 143-145.

Heng, S., and M. Shibaoka, 1983, Hydrogenation of the inertinite macerals of Bayswater coal: Fuel, v. 62, p. 610-612.

Hirschon, A.S., and R.B. Wilson, Jr., 1991, Dispersed catalysts for coal liquefaction, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society, Symposium Series 461, p. 273-283.

Howard-Smith, I., and G.J. Werner, 1976, Coal conversion technology: Park Ridge, N.J., Noyes Data Corporation, Chemical technology review no. 66, 133 p.

Hower, J.C., 1989, Petrology of liquefaction residues from the Breckinridge cannel, western Kentucky: Organic Geochemistry, v. 14, p. 299-305.

Hower, J.C., R.A. Keogh, and D.N. Taulbee, 1991, Petrology of liquefaction residues: maceral concentrates from a Pond Creek durain, eastern Kentucky: Organic Geochemistry, v. 17, p. 431-438.

Hower, J.C., R.A. Keogh, and B.H. Davis, 1992, Petrography of liquefaction residues: high-vitrinite, high-sulfur Davis (western Kentucky No. 6) coal: Energy & Fuels, v. 6, p. 609-613.

Hower, J.C., R.A. Keogh, D.N. Taulbee, and R.F. Rathbone, 1993, Petrography of liquefaction residues: semifusinite concentrates from a Peach Orchard coal lithotype, Magoffin County, Kentucky: Organic Geochemistry, v. 20, p. 167-176.

Hower, J.C., K.B. Anderson, G. Mackay, H. Pinheiro, D. Flores, and M.J. Lemos de Sousa, 1994, Interlaboratory comparisons of petrography of liquefaction residues from three Argonne premium coals: Organic Geochemistry, v. 22, p. 27-32.

Hower, J.C., U.M. Graham, R.F. Rathbone, and T.L. Robl, 1994, Retorting potential of lignite overburden from clay mining: Journal of Coal Quality, v. 13, p. 113-117.

Huttinger, K.J., 1988, Kinetics of coal gasification, in Y. Yurum, ed., New trends in coal science: Boston, Kluwer Academic Publishers, p. 433-452.

Huttinger, K.J., 1988, Transport and other effects in coal gasification, in Y. Yurum, ed., New trends in coal science: Boston, Kluwer Academic Publishers, p. 453-480.

Hutton, A.C., U.M. Graham, J.C. Hower, R.F. Rathbone, and T.L. Robl, 1996, Petrography of pyrolysis and pyrolysis-steam retorted residues from the alpha torbanite and the alpha cannel coal: Organic Geochemistry, v. 24, p. 219-226.

Jasienko, S., H. Kidawa, and H. Machnikowska, 1981, Properties and structure of the petrographic components of bituminous coals and their behaviour during liquefaction, in Proceedings, International Conference on Coal Science: Essen, Verlag Glückauf GmbH, p. 28-33.

Jiang, L., Z. Chen, and S.M. Farouq Ali, 2018, General hydro-geological impact of cleats on underground coal gasification: Fuel, v. 224, p. 128-137.

Joseph, J.T., 1991, Liquefaction behavior of solvent-swollen coals: Fuel, v. 70, p. 139-144.

Joseph, J.T., R.B. Fisher, C.A. Masin, G.R. Dyrkacz, C.A. Bloomquist, and R.E. Winans, 1991, Coal maceral chemistry. 1. Liquefaction behavior: Energy & Fuels, v. 5, p. 724-729.

Jusino, A., and H.H. Schobert, 2006, The use of sulfur to extract hydrogen from coal: International Journal of Coal Geology, v. 65, p. 223-234.

Kalkreuth, W., and G. Charnet, 1984, Liquefaction characteristics of selected vitrinite and liptinite rich coals from British Columbia, Canada: Fuel Processing Technology, v. 9, no. 1, p. 53-65.

Kalkreuth, W., C. Roy, and M. Hebert, 1986, Vacuum pyrolysis of Canadian Prince mine coal, chemical and petrological analyses of feedcoal and solid residues: Erdöl und Kohle-Erdgas-Petrochemie, v. 39, p. 213-222.

Kalkreuth, W., C. Roy, and M. Steller, 1989, Conversion characteristics of selected Canadian coals based on hydrogenation and pyrolysis experiments, in Contributions to Canadian coal geoscience: Geological Survey of Canada, Paper 89-8, p. 108-114.

Kalkreuth, W., M. Steller, I. Wieschenkamper, and S. Ganz, 1991, Petrographic and chemical characterization of Canadian and German coals in relation to utilization potential. 1. Petrographic and chemical characterization of feedcoals: Fuel, v. 70, p. 683-694.

Keogh, R.A., D.N. Taulbee, J.C. Hower, B. Chawla, and B.H. Davis, 1992, Liquefaction characteristics of the three major maceral groups separated from a single coal: Energy & Fuels, v. 6, p. 614-618.

Khadse, A.N., 2014, Resources and economic analyses of underground coal gasification in India: Fuel, v. 142, p. 121-128.

Klasson, K.T., M.D. Ackerson, E.C. Clausen, and J.L. Gaddy, 1993, Direct bacterial conversion of coal to liquid fuels, in D.L. Crawford, ed., Microbial transformations of low rank coals: Baco Raton, CRC Press, p. 93-110.

Kopyscinski, J., T.J. Schildhauer, and S.M.A. Biollaz, 2010, Review article: Production of synthetic natural gas (SNG) from coal and dry biomass – a technology review from 1950 to 2009: Fuel, v. 89, p. 1763-1783.

Kristiansen, A., 1996, Understanding coal gasification: London, IEA Coal Research, IEA Coal Research Report Series, IEACR/86, 69 p.

Lee, E.S., 1979, Coal liquefaction, in C.Y. Wen and E.S. Lee, eds., Coal conversion technology: Reading, MA, Addison-Wesley Publishing Co., p. 428-545.

Li, P., Z.-M. Zong, X.-Y. Wei, Y.-G. Wang, and G.-X. Fan, 2019, Structural features of liquefaction residue from Shenmu-Fugu subbituminous coal: Fuel, v. 242, p. 819-827.

Li, W., Z.-Q. Bai, J. Bai, and X. Li, 2017, Transformation and roles of inherent mineral matter in direct coal liquefaction: A mini-review: Fuel, v. 197, p. 209-216.

Li, X., J. Li, G.-G. Wu, Z.-Q. Bai, and W. Li, 2018, Clean and efficient utilization of sodium-rich Zhundong coals in China: Behaviors of sodium species during thermal conversion processes: Fuel, v. 218, p. 162-173.

Li, X.-H., L.-L. Li, B.-F. Li, J. Feng, and W.-Y. Li, 2017, Product distribution and interactive mechanism during co-pyrolysis of a subbituminous coal and its direct liquefaction residue: Fuel, v. 199, p. 372-379.

Lin, S., M. Harada, Y. Suzuki, and H. Hatano, 2002, Hydrogen production from coal by separating carbon dioxide during gasification: Fuel, v. 81, p. 2079-2085.

Liu, S., W. Ma, D. French, K. Tuo, and X. Mei, 2019, Sequential mineral transformation during underground coal gasification with the presence of coal partings: International Journal of Coal Geology, v. 208, p. 1-11.

Ludwik-Pardała, M.,and K. Stańczyk, 2015, Underground coal gasification (UCG): An analysis of gas diffusion and sorption phenomena: Fuel, v. 150, p. 48-54.

Mason, D.M., 1976, Control of agglomeration in coal hydrogasification, in C.J. Smith, compiler, Proceedings of the coal agglomeration and conversion symposium: West Virginia Geological and Economic Survey, p. 163-174.

Massey, L.G., ed., 1974, Coal gasification: Washington, D.C., American Chemical Society, Advances in Chemistry Series 131, 266 p.

Merrick, D., 1984, Coal combustion and conversion technology: New York, Elsevier, 405 p.

Milici, R.C., 2009, Coal-to-liquids: Potential impact on U.S. coal reserves: Natural Resources Research, v. 18, p. 85-94.

Miller, R.L., R.M. Baldwin, O. Nguanprasert, and D.R. Kennar, 1991, Effect of mild chemical pretreatment on liquefaction reactivity of Argonne coals, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society, Symposium Series 461, p. 260-272.

Miller, R.N., 1989, Effects of preparation, pretreatment, and oxidation on coal conversion, in R. Klein and R. Wellek, eds., Sample selection, aging, and reactivity of coal: New York, John Wiley & Sons, p. 357-404.

Miranda, J.L., F. Aguilar, R. Juan, M.T. Martinez, and V.L. Cebolla, 1991, Effect of mineral matter on the hydrogenation of Spanish coals: Erdöl und Kohle-Erdgas-Petrochemie, v. 44, p. 333-337.

Mitchell, G.D., A. Davis, and W. Spackman, 1977, A petrographic classification of solid residues derived from the hydrogenation of bituminous coals, in R.T. Ellington, ed., Liquid fuels from coal: New York, Academic Press, p. 255-270.

Mitchell, G.D., 2008, Direct coal liquefaction, in I. Suárez-Ruiz and J.C. Crelling, eds., Applied coal petrology: the role of petrology in coal utilization: New York, Academic Press, p. 145-171.

Montgomery, D.S., 1974, Coal properties bearing on coal liquefaction and gasification, in J.F. Fryer, J.D. Campbell, and J.G. Speight, eds., Symposium on coal evaluation: Alberta Research Council, Information Series 76, p. 152-160.

Montgomery, S.L., and S. Morzenti, 2006, Underground coal gasification nears commercialization: Oil & Gas Journal, v. 104.13, p. 51-53, 56-58.

Mraw, S.C., J.P. de Neufville, H. Freund, Z. Baset, M.L. Gorbaty, and F.J. Wright, 1983, The science of mineral matter in coal, in M.L. Gorbaty, J.W. Larsen, and I. Wender, eds., Coal science, v. 2: New York, Academic Press, p. 1-63. (gasification and liquefaction, p. 42-48)

Mudamburi, Z., and P.H. Given, 1985, Multifaceted study of a Cretaceous coal with algal affinities—II. Composition of liquefaction products: Organic Geochemistry, v. 8, p. 221-231.

Najafi, M., S.M. Esmaiel Jalali, and R. KhaloKakaie, 2014, Thermal-mechanical-numerical analysis of stress distribution in the vicinity of underground coal gasification (UCG) panels: International Journal of Coal Geology, v. 134-135, p. 1-16.

Neavel, R.C., 1976, Coal plasticity mechanism: inferences from liquefaction studies, in C.J. Smith, compiler, Proceedings of the coal agglomeration and conversion symposium: West Virginia Geological and Economic Survey, p. 119-133.

Neavel, R.C., 1976, Liquefaction of coal in hydrogen-donor and non-donor vehicles: Fuel, v. 55, p. 237-242.

Neavel, R.C., 1981, Origin, petrography, and classification of coal, in M.A. Elliott, ed., Chemistry of coal utilization, second supplementary volume: New York, John Wiley & Sons, p. 91-158.

Neavel, R.C., 1982, Coal plasticity mechanism: inferences from liquefaction studies, in M.L. Gorbaty, and others, eds., Coal science, v. 1: New York, Academic Press, p. 1-19.

Neill, P.H., L.J. Shadle, and P.H. Given, 1988, Dependence of coal liquefaction behaviour on coal characteristics. 9. Liquefaction of a large set of high-sulphur coal samples: Fuel, v. 67, p. 1459-1464.

Ng, N., 1983, Optical microscopy of carbonaceous solid residues from coal hydrogenation: a classification: Journal of Microscopy, v. 132, pt. 3, p. 289-296.

Nieć, M., E. Sermet, J. Chećko, and J. Górecki, 2017, Evaluation of coal resources for underground gasification in Poland. Selection of possible UCG sites: Fuel, v. 208, p. 193-202.

Nowak, M.A., A.D. Paul, R.D. Sriastava, and A. Radziwon, 2004, Coal conversion, in Reference Module in Earth Systems and Environmental Sciences: Elsevier, Encyclopedia of Energy, v. 1, p. 425-434.

Nywlt, M., and S. Peter, 1992, Improvement of coal gasification—effect of salt dissolved in supercritical water: Erdöl und Kohle-Erdgas-Petrochemie, v. 45, p. 349-353.

Ogo, Y., and Y. Miyamoto, 1987, Donor-solvent liquefaction of Morwell and Illinois No. 6 coals up to 60 MPa pressure, in J.A. Moulijn, ed., 1987 International Conference on Coal Science: New York, Academic Press, p. 219-222.

Okada, K., 1995, Possible impacts of coal properties on the coal conversion technology, in J.A. Pajares and J.M.D. Tascon, eds., Coal science: New York, Elsevier, Coal Science and Technology 24, v. 2, p. 1247-1250.

Oliver, R.L., and G.F. “Pete” Dana, 1991, Underground coal gasification, in D.C. Peters, ed., Geology of coal resource utilization: Fairfax, VA, Techbooks, p. 155-168.

Ouchi, K., S. Ibaragi, A. Kobayashi, K. Makino, and H. Itoh, 1984, Reactivity of coals in hydrogenation: Fuel, v. 63, p. 427-430.

Ouchi, K., S. Ibaragi, A. Kobayashi, K. Tanimoto, M. Madabe, H. Itoh, K. Matsubara, and T. Takekawa, 1984, Effect of blending on liquefaction of coals: Fuel, v. 63, p. 78-83.

Parkash, S., A.R. Cameron, and M.P. du Plessis, 1983, Application of coal petrography in the liquefaction of subbituminous coals and lignites: Alberta Research Council, Information Series 102, 30 p.

Parkash, S., B. Ignasiak, M.P. du Plessis, and A.R. Cameron, 1983, Management of coal macerals in the liquefaction of low-rank coals: Liquid Fuels Technology, v. 1, p. 219-233.

Parkash, S., M.P. du Plessis, A.R. Cameron, and W.D. Kalkreuth, 1984, Petrography of low rank coals with reference to liquefaction potential: International Journal of Coal Geology, v. 4, p. 209-234.

Parkash, S., K. Lali, M. Moluszko, and M.P. du Plessis, 1984, Contribution of vitrinite macerals to the liquefaction of subbituminous coals: Fuel Processing Technology, v. 9, p. 139-148.

Parkash, S., K. Lali, M. Moluszko, and M.P. du Plessis, 1985, Separation of macerals from subbituminous coals and their response to liquefaction: Liquid Fuels Technology, v. 3, p. 345-375.

Patrick, J.W., 2009, The 7th European conference on coal research and its application (preface): Fuel, v. 88, p. 2327.

Patzek, T.W., and G.D. Croft, 2009, Potential for coal-to-liquids conversion in the United States—Fischer–Tropsch synthesis: Natural Resources Research, v. 18, no. 3.

Pelofsky, A.H., ed., 1979, Coal conversion technology, problems and solutions: Washington, D.C., American Chemical Society, Symposium Series 110, 257 p.

Perrotta, A.J., J.P. McCullough, O.A. Larson, and R.J. Gray, 1984, Pressure-temperature microscopy of coal liquefaction: International Journal of Coal Geology, v. 4, p. 235-247.

Rathbone, R.F., J.C. Hower, and F.J. Derbyshire, 1993, The application of fluorescence microscopy to coal-derived resid characterization: Fuel, v. 72, p. 1177-1185.

Rickert, D.A., W.J. Ulman, and E.R. Hampton, eds., 1979, Synthetic fuels development: earth-science considerations: U.S. Geological Survey, 45 p.

Riepe, W., and M. Steller, 1987, Relationship between reflectance distribution and hydrogenation behavior of hard coals: Fuel, v. 66, p. 83-85.

Risser, H.E., 1968, Gasification and liquefaction: their potential impact on various aspects of the coal industry: Illinois State Geological Survey, Circular 430, 28 p.

Rivera-Utrilla, J., M.A. Ferro-Garcia, F.J. Maldonado-Hodar, and A.M. Mastral-Lamarca, 1994, Influence of the porous texture of coals on their hydrogenation processes. I. Physical characteristics of coals: Journal of Coal Quality, v. 13, p. 46-51.

Roberts, M.J., R.C. Everson, H.W.J.P. Neomagus, D. Van Niekerk, J.P. Mathews, and D.J. Branken, 2014, Influence of maceral composition on the structure, properties and behaviour of chars derived from South African coals: Fuel, v. 142, p. 9-20.

Robinson, K.K., and D.F. Tatterson, 2007, Fischer-Tropsch oil-from-coal promising as transport fuel: Oil & Gas Journal, v. 105.8, p. 20-31.

Robinson, K.K., and D.F. Tatterson, 2008, Economics on Fischer-Tropsch coal-to-liquids method updated: Oil & Gas Journal, v. 106.40, p. 22-26.

Róg, L., 2018, Vitrinite reflectance as a measure of the range of influence of the temperature of a georeactor on rock mass during underground coal gasification: Fuel, v. 224, p. 94-100.

Rőnsch, S., J. Schneider, S. Matthischke, M. Schlűter, M. Gőtz, J. Lefebvre, P. Prabhakaran, and S. Bajohr, 2016, Review on methanation – From fundamentals to current projects: Fuel, v. 166, p. 276-296. (syngas)

Rothaemel, M., and H.-D. Holtmann, 2002, Methanol to propylene MTP—Lurgi’s way: Erdöl und Kohle-Erdgas-Petrochemie, v. 118, p. 234-237.

Russell, S.J., and S.M. Rimmer, 1979, Analysis of mineral matter in coal, coal gasification ash, and coal liquefaction residues by Scanning Electron Microscopy and X-ray diffraction, in C. Karr, Jr., ed., Analytical methods for coal and coal production, v. 3: New York, Academic Press, p. 133-162.

Samdani, G., A. Ganesh, P. Aghalayam, R.K. Sapru, B.L. Lohar, and S. Mahajani, 2017, Kinetics of heterogeneous reactions with coal in context of underground coal gasification: Fuel, v. 199, p. 102-114.

Samdani, G., P. Aghalayam, A. Ganesh, and S. Mahajani, 2018, A process model for underground coal gasification – Part III: Parametric studies and UCG process performance: Fuel, v. 234, p. 392-405.

Saranchuk, W.I., T.G. Shendrik, V. Simonova, J.L. Komraus, and E.S. Poliel, 1994, Hydrogenation of Ukrainian saline coals. Iron compounds and their transformation during hydrogenation: Erdöl und Kohle-Erdgas-Petrochemie, v. 47, p. 385-388.

Schon, S.C., and A.A. Small, III, 2006, Climate change and the potential of coal gasification: Geotimes, v. 51, no. 9, p. 20-23.

Senftle, J.T., and A. Davis, 1982, Relationships between coal constitution, thermoplastic properties and liquefaction behavior of coals and vitrinite concentrates from the Lower Kittanning seam: The Pennsylvania State University, Coal Research Section, Report DOE-30013-FI.

Senftle, J.T., and A. Davis, 1984, Effect of oxidative weathering on the thermoplastic and liquefaction behaviors of four coals: International Journal of Coal Geology, v. 3, p. 375-381.

Shah, K., R. Atkin, R. Stanger, T. Wall, and B. Moghtaderi, 2014, Interactions between vitrinite and inertinite-rich coals and the ionic liquid – [bmim][Cl]: Fuel, v. 119, p. 214-218.

Shibaoka, M., and S. Ueda, 1978, Formation and stability of mesophase during coal hydrogenation: Fuel, v. 57, p. 667-675.

Shibaoka, M., J.F. Stephens, and N.J. Russell, 1979, Microscopic observations of the swelling of a high-volatile bituminous coal in response to organic solvents: Fuel, v. 58, p. 515-522.

Shibaoka, M., 1981, Behavior of vitrinite macerals in some organic solvent in the autoclave: Fuel, v. 60, p. 240-246.

Shibaoka, M., A.J.R. Bennett, and H. Echigo, 1981, Some characteristics of Wandoan coal in relation to hydrogenation: Fuel, v. 61, p. 265.

Shibaoka, M., 1985, Microscopic observation of the swelling and dissolution of coal by tetralin during the early stages of hydrogenation: Fuel, v. 64, p. 606-612.

Shoko, E., B. McLellan, A.L. Dicks, J.C. Diniz da Costa, 2006, Hydrogen from coal: production and utilization technologies: International Journal of Coal Geology, v. 65, p. 213-222.

Siebert, J., 1990, Monitoring coal seam properties; in situ test and measuring methods: Erdöl und Kohle-Erdgas-Petrochemie, v. 43, p. 181-186.

Singh, S., V.B. Neculaes, V. Lissianski, G. Rizeq, S.B., Bulumulla, R. Subia, and J. Manke, 2014, Microwave assisted coal conversion: Fuel, v. 140, p. 495-501.

Skidmore, D., 1976, Agglomeration as a factor in the non-catalytic liquefaction of coal, in C.J. Smith, compiler, Proceedings of the coal agglomeration and conversion symposium: West Virginia Geological and Economic Survey, p. 135-145.

Snape, C.E., 1987, Characterization of organic structure for liquefaction: Fuel Processing Technology, v. 15, p. 257-279.

Snape, C.E., and C.J. Lafferty, 1990, Catalytic hydropyrolysis, a route to high oil yields from coal: Erdöl und Kohle-Erdgas-Petrochemie, v. 43, p. 342-343.

Snape, C.E., 1991, Similarities and differences of coal reactivity in liquefaction and pyrolysis: Fuel, v. 70, p. 285.

Snape, C.E., F.J. Derbyshire, H.P. Stephens, R.J. Kottenstett, and N.W. Smith, 1991, Influence of organic coal structure on liquefaction behavior under low-severity conditions, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society, Symposium Series 461, p. 182-192.

Solomon, P.R., M.A. Serio, G.V. Deshpande, E. Kroo, H.H. Schobert, and C. Burgess, 1991, Chemistry of catalytic preliquefaction, in H.H. Schobert, K.D. Bartle, and L.J. Lynch, eds., Coal science II: Washington, D.C., American Chemical Society, Symposium Series 461, p. 193-212.

Sprunk, G.C., 1942, Influence of physical constitution of coal upon its chemical, hydrogenation, and carbonization properties: Journal of Geology, v. 50, p. 411-436.

Stańczyk, K., K. Kapusta, M. Wiatowski, J. Świądrowski, A. Smoliński, J. Rogut, and A. Kotyrba, 2011, Experimental simulation of hard coal underground gasification for hydrogen production: Fuel, v. 91, p. 40-50.

Steller, M., W. Kalkreuth, and W. Hodek, 1987, Hydrogenation of selected subbituminous and bituminous coals; micropetrological and chemical studies on feedstock and reaction residues: Erdöl und Kohle-Erdgas-Petrochemie, v. 40, p. 383-393.

Steller, M., 1987, Hydrogenation behavior of coal maceral association: International Journal of Coal Geology, v. 9, p. 109-127.

Steller, M., 1987, The influence of maceral intergrowth on the hydrogenation of coal, in 1987 International Conference on Coal Science: New York, Elsevier Science Publishers, p. 115-118.

Stephens, H.P., and R.J. Kottenstette, 1991, Studies of coal reactivity for direct liquefaction: Fuel, v. 70, p. 386.

Stiegel, G.J., and M. Ramezan, 2006, Hydrogen from coal gasification: an economical pathway to a sustainable energy future: International Journal of Coal Geology, v. 65, p. 173-190.

Stranges, A.N., 2001, Germany’s synthetic fuel industry 1927-1945: University of Kentucky, Center for Applied Energy Research, Energeia, v. 12, no. 5, p. 1-2, 6. (history of liquefaction)

Takemura, Y., and Y. Saito, 1994, Action of H2O in coal: effect of H2O addition upon nickel-catalyzed hydroliquefaction of brown Morwell coal: Journal of Coal Quality, v. 13, p. 7-9.

Tao, F.F., and L.D. Brown, 1988, Anisotropic coke formation during coal slurry heating in the coal liquefaction process: Fuel, v. 67, p. 4-9.

Thomas, L., 2002, Coal geology: Hoboken, N.J., John Wiley & Sons, Inc., 384 p. (coal gasification and liquefaction, p. 271-279)

Tomlinson, G., D. Gray, and M. Neuworth, 1985, The impact of rank-related coal properties on the response of coals to continuous direct liquefaction processes, in Proceedings, 1985 International Conference on Coal Science: Pergamon Press, p. 3-6.

Van Dyk, J.C., M.J. Keyser, and M. Coertzen, 2006, Syngas production from South African coal sources using Sasol-Lurgi gasifiers: International Journal of Coal Geology, v. 65, p. 243-253.

Van Niekerk, D., G.D. Mitchell, and J.P. Mathews, 2010, Petrographic and reflectance analysis of solvent-swelled and solvent-extracted South African vitrinite-rich and inertinite-rich coals: International Journal of Coal Geology, v. 81, p. 45-52.

Van Rensburg, W.C.J., 1979, Coal gasification and liquefaction: Austin, TX, Bureau of Economic Geology, Mineral Resource Circular 62, 42 p.

Wagner, N.J., M. Coertzen, R.H. Matjie, and J.C. van Dyk, 2008, Coal gasification, in I. Suárez-Ruiz and J.C. Crelling, eds., Applied coal petrology: the role of petrology in coal utilization: New York, Academic Press, p. 119-144.

Wakeley, L.D., A. Davis, R.G. Jenkins, G.D. Mitchell, and P.L. Walker, Jr., 1979, The nature of solids accumulated during solvent refining of coal: Fuel, v. 58, p. 379-385.

Wang, S., Y. Tang, H.H. Schobert, Y. Guo, and Y. Su, 2013, Petrology and structural studies in liquefaction reactions of Late Permian coals from southern China: Fuel, v. 107, p. 518-524.

Wang, S., Y. Tang, H.H. Schobert, D. Jiang, Y. Sun, Y. Guo, Y. Su, and S. Yang, 2015, Application and thermal properties of hydrogen-rich bark coal: Fuel, v. 162, p. 121-127. (barkinite)

Wang, Y., and D.A. Bell, 2016, Competition between H2O and CO2 during the gasification of Powder River Basin coal: Fuel, v. 187, p. 94-102.

Webber, M.E., 2009, Coal-to-liquids: the good, the bad and the ugly: Earth, v. 54, no. 4, p. 44-51.

Wen, C.-Y., E.S. Lee, and S. Dutta, 1979, Coal conversion technology: Reading, MA, Addison-Wesley Publishing Co., Energy Science and Technology 2, 586 p.

Wertz, D.L., C.B. Smithhart, M.L. Steele, and S. Caston, 1993, X-ray characterization of resides from the Wilsonville, AL, two-stage direct liquefaction facility. I. XRD and XRF analysis of the Illinois No. 6 resids from run no. 257: Journal of Coal Quality, v. 12, p. 36-41.

Whitehurst, D.D., ed., 1980, Coal liquefaction fundamentals: Washington, D.C., American Chemical Society, Symposium Series 139, 411 p.

Whitehurst, D.D., T.O. Mitchell, and M. Farcasin, 1980, Coal liquefaction: New York, Academic Press, 378 p.

Wiatowski, M., K. Kapusta, J. Świądrowski, K. Cybulski, M. Ludwik-Pardała, J. Grabowski, and K. Stańczyk, 2015, Technological aspects of underground coal gasification in the experimental “Barbara” mine: Fuel, v. 159, p. 454-462.

Wilcox, J., E. Rupp, S.C. Ying, D.-H. Lim, A.S. Negreira, A. Kirchofer, F. Feng, and K. Lee, 2012, Mercury adsorption and oxidation in coal combustion and gasification processes: International Journal of Coal Geology, v. 90-91, p. 4-20.

Williams, A., M. Pourkashanian, J.M. Jones, and N. Skorupska, 2000, Combustion and gasification of coal: New York, Taylor & Francis, Applied Energy Technology Series, 263 p.

Xin, L., Z.-T. Wang, G. Wang, W. Nie, G. Zhou, W.-M. Cheng, and J. Xie, 2017, Technological aspects for underground coal gasification in steeply inclined thin coal seams at Zhongliangshan coal mine in China: Fuel, v. 191, p. 486-494.

Xu, J., Y. Yang, and Y.-W. Li, 2015, Recent development in converting coal to clean fuels in China: Fuel, v. 152, p. 122-130.

Yan, J., Z. Bai, W. Li, and J. Bai, 2014, Direct liquefaction of a Chinese brown coal and CO2 gasification of the residues: Fuel, v. 136, p. 280-286.

Yarzab, R.F., P.H. Given, W. Spackman, and A. Davis, 1980, Dependence of coal liquefaction behavior on coal characteristics. 4. Cluster analyses for characteristics of 104 coals: Fuel, v. 59, p. 81-92.

Younger, P.L., D.J. Roddy, and G. González, 2010, King coal: restoring the monarchy by underground gasification coupled to CCS, in B.A. Vining and S.C. Pickering, eds., Petroleum geology: from mature basins to new frontiers: London, Geological Society, Proceedings of the 7th Petroleum Geology Conference, p. 1155-1163.

Yu, J., C. Jiang, Q. Guan, J. Gu, P. Ning, R. Miao, Q. Chen, and J. Zhang, 2018, Conversion of low-grade coals in sub- and supercritical water: A review: Fuel, v. 217, p. 275-284.

Zhang, J., Y. Liang, P.M. Yau, R. Pandey, and S. Harpalani, 2015, A metaproteomic approach for identifying proteins in anaerobic bioreactors converting coal to methane: International Journal of Coal Geology, v. 146, p. 91-103.

Zhang, J., Y. Liang, R. Pandey, and S. Harpalani, 2015, Characterizing microbial communities dedicated for conversion of coal to methane in situ and ex situ: International Journal of Coal Geology, v. 146, p. 145-154.