**Gas Shales 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.

Abad, A.F., 2013, 3D seismic attribute expression of the Ellenburger Group karst-collapse features and their effects on the production of the Barnett Shale, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 102 p.

Abouelresh, M.O., and R.M. Slatt, 2011, Shale depositional processes: Example from the Paleozoic Barnett Shale, Fort Worth Basin, Texas, USA: Central European Journal of Geosciences, v. 3, no. 4, p. 398-409.

Abouelresh, M.O., and R.M. Slatt, 2012, Lithofacies and sequence stratigraphy of the Barnett Shale in east-central Fort Worth Basin, Texas: AAPG Bulletin, v. 96, p. 1-22.

Abouelresh, M.O., L. Babalola, A. Bokhari, M. Omer, T. Koithan, and D. Boyde, 2020, Sedimentology, geochemistry and reservoir potential of the organic-rich Qusaiba Shale, Tabuk Basin, NW Saudi Arabia: Marine and Petroleum Geology, v. 111, p. 240-260.

Abousleiman, Y.N., M.H. Tran, S.K. Hoang, F.-J. Ulm, C.P. Bobko, and J.A. Ortega, 2008, Study characterizes Woodford Shale: American Oil & Gas Reporter, v. 51, no. 1, p. 106-115.

Abousleiman, Y.N., M. Tran, S. Hoang, A. Ortega, and F. Ulm, 2010, Geomechanics field characterization of Woodford Shale and Barnett Shale with advanced logging tools and nano-indentation on drilling cuttings: Society of Exploration Geophysicists, The Leading Edge, v. 29, no. 6, p. 730-736.

Abraham, K., 2012, Fayetteville remaining potential awaits higher prices: World Oil, v. 233, no. 3, p. 62-68.

Abraham, K., 2013, Marcellus/Utica shale gas emerges from low price fog as liquids excel: World Oil, v. 234, no. 4, p. 116-134. (Marcellus structure map; Utica isopach map)

Abraham, K., 2013, Unconventionals change the game, become the norm: World Oil, v. 234, no. 9, p. 210.

Achang, M., J.C. Pashin, and X. Cui, 2017, The influence of particle size, microfractures, and pressure decay on measuring the permeability of crushed shale samples: International Journal of Coal Geology, v. 183, p. 174-187.

Adams, C., W. Walsh, C. Lee, and B. Kerr, 2006, Summary of shale gas activity in northeast British Columbia: British Columbia Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Open File 2006-1, 7 p. <http://www.em.gov.bc.ca/dl/oilgas/uncog/Shale_Gas_Activity_Summary_PGOF_2006_01.pdf>

Adams, C., S. McPhail, and W. Walsh, 2007, Summary of shale gas activity in northeast British Columbia 2007: British Columbia Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Open File 2007-1, 10 p. <http://www.em.gov.bc.ca/subwebs/oilandgas/petroleum_geology/uncog/Summary%20of%20Shale%20Gas%20Activity%20in%20NEBC%202007%20Web.pdf>

Addison, V., 2014, Mexico’s energy reform opens door to shale resources: Hart Energy Publishing, E&P, v. 87, no. 7, p. 34, 37.

Addison, V., A. Gallay, and L. Haines, 2016, Posted from the Permian: Oil and Gas Investor, v. 36, no. 7, p. 68-71.

Agrawal, A., Y. Wei, and S.A. Holditch, 2012, A technical and economic study of completion techniques in five emerging U.S. gas shales: a Woodford Shale example: SPE Drilling and Completion, v. 27, no. 1, p. 39-49.

Agrawal, S., and M.M. Sharma, 2015, Practical insights into liquid loading within hydraulic fractures and potential unconventional gas reservoir optimization strategies: Journal of Unconventional Oil and Gas Resources, v. 11, p. 60-74.

Agrawal, V., and S. Sharma, 2018, Molecular characterization of kerogen and its implications for determining hydrocarbon potential, organic matter sources and thermal maturity in Marcellus Shale: Fuel, v. 228, p. 429-437.

Agin, N., 2011, Appalachia’s Marcellus is a proven giant: Hart Energy Publishing, E&P, v. 84, no. 9, p. 76-81.

Agin, N., 2011, Oklahoma’s ‘back yard’ turns up world-class resource: Hart Energy Publishing, E&P, v. 84, no. 11, p. 64-68.

Agin, N., 2011, Fayetteville shale gas still a hot commodity: Hart Energy Publishing, E&P, v. 84, no. 12, p. 64, 66, 68.

Agin, N., 2012, Shale gas is poised to become international phenomenon: Hart Energy Publishing, E&P, v. 85, no. 5, p. 86-92.

Agin, N., 2012, South America rising: Hart Energy Publishing, E&P, v. 85, no. 7, p. 40, 42-43.

Aguilera, R.F., and M. Radetzki, 2013, Shale gas and oil: fundamentally changing global energy markets: Oil & Gas Journal, v. 111.12, p. 54-61.

Aguilera, R.F., R.D. Ripple, and R. Aguilera, 2014, Link between endowments, economics and environment in conventional and unconventional gas reservoirs: Fuel, v. 126, p. 224-238.

Aguilera, R., ed., 2018, Unconventional gas and tight oil exploitation: Society of Petroleum Engineers, Monograph Series, 445 p.

Aguilera, R., 2018, Tight gas and tight oil development, in R. Aguilera, ed., Unconventional gas and tight oil exploitation: Society of Petroleum Engineers, Monograph Series, p. 103-173.

Aguilera, R., 2018, Shale gas and liquid-rich shale, in R. Aguilera, ed., Unconventional gas and tight oil exploitation: Society of Petroleum Engineers, Monograph Series, p. 267-323.

Agyarko, L.B., and G.A. Mansoori, 2013, A review of non-renewable energy options in Illinois: International Journal of Oil Gas and Coal Technology, v. 6, no. 3, p. 288-347.

Ahlbrandt, T., 2010, Australia’s Beetaloo Basin offers Falcon Oil & Gas major reserves potential: American Oil & Gas Reporter, v. 53, no. 5, p. 52-57.

Ahlstrom, J., and B. Faraj, 2002, Shale gas potential of the Late Cretaceous Second White Speckled Formation (2WS) in the Medicine Hat area of southern Alberta, Canada: Des Plaines, Illinois, Gas Technology Institute, GRI-02/0218, 45 p.

Ahmad, A., and R. Rezaee, 2015, Pore pressure prediction for shale formations using well log data, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 139-167.

Ahn, C.H., R. Dilmore, and J.Y. Wang, 2014, Development of innovative and efficient hydraulic fracturing numerical simulation model and parametric studies in unconventional naturally fractured reservoirs: Journal of Unconventional Oil and Gas Resources, v. 8, p. 25-45.

Akihisa, K., L.J. Knapp, K. Sekine, T. Akai, S. Uchida, J.M. Wood, O.H. Ardakani, and H. Sanei, 2018, Integrating mud gas and cuttings analyses to understand local CGR variation in the Montney tight gas reservoir: International Journal of Coal Geology, v. 197, p. 42-52.

Akob, D.M., I.M. Cossarelli, D.S. Dunlap, E.L. Rowan, and M.M. Lorah, 2015, Organic and inorganic composition and microbiology of produced waters from Pennsylvania shale gas wells: Applied Geochemistry, v. 60, p. 116-125.

Alford, J., Tollefsen, E., Kok, J., Han, S.H., Vauter, E., Baihly,J., Perry, A., and Blanke, S., 2011, LWD provides solution for bolstering shale gas economics: Hart Energy Publishing, E&P, v. 84, no. 2, p. 36, 38-39.

Alfred, D., and L. Vernik, 2012, New modeling methods optimize production in shale plays: American Oil & Gas Reporter, v. 55, no. 11, p. 92-100.

Al Hinai, A., R. Rezaee, L. Esteban, and M. Labani, 2014, Comparisons of pore size distribution: A case from the western Australian gas shale formations: Journal of Unconventional Oil and Gas Resources, v. 8, p. 1-13.

Al Hinai, A., and R. Rezaee, 2015, Pore geometry in gas shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 89-116.

Allison, D., and M. Parker, 2014, Tech trends 2014: Refracturing extend lives of unconventional reservoirs: American Oil & Gas Reporter, v. 57, no. 1, p. 137-143.

Allison, E., 2013, EPA fracturing study moves forward—slowly: AAPG Explorer, v. 34, no. 2, p. 32, 34. <http://www.aapg.org/explorer/2013/02feb/policy0213.cfm>

Alsalem, O.B., M. Fan, and X. Xie, 2017, Late Paleozoic subsidence and burial history of the Fort Worth Basin: AAPG Bulletin, v. 101, p. 1813-1833.

Alsalem, O.B., M. Fan, and X. Xie, 2019, Late Paleozoic subsidence and burial history of the Fort Worth Basin: reply: AAPG Bulletin, v. 103, p. 1014-1015.

Altamar, R.P., 2013, Brittleness estimation from seismic measurements in unconventional reservoirs: Application to the Barnett Shale: Norman, University of Oklahoma, unpublished PhD dissertation, 153 p.

Altamar, R.P., and K. Marfurt, 2014, Mineralogy-based brittleness prediction from surface seismic data: Application to the Barnett Shale: Interpretation, v. 2, no. 4, p. SQ1-SQ17.

Altamar, R.P., and K.J. Marfurt, 2015, Identification of brittle/ductile areas in unconventional reservoirs using seismic and microseismic data: Application to the Barnett Shale: Interpretation, v. 3, no. 4, p. T233-T243.

Alzahabi, A., M.Y. Soliman, R.M. Bateman, G.B. Asquith, A. Algarhy, and N. Stegent, 2015, Technology screens shale play criteria: American Oil & Gas Reporter, v. 58, no. 4, p. 74-79.

Alzate, J.H., and D. Devegowda, 2013, Integration of surface seismic, microseismic, and production logs for shale gas characterization: Methodology and field application: Interpretation, v. 1, no. 2, p. SB37-SB49.

Amann-Hildebrand, A., A. Ghanizadeh, and B.M. Krooss, 2012, Transport properties of unconventional gas systems: Marine and Petroleum Geology, v. 31, p. 90-99.

Ambrose, R.J., R.C. Hartman, M. Diaz-Campos, I.Y. Akkutlu, and C.H. Sondergeld, 2010, New pore-scale considerations for shale gas-in-place calculations: Society of Petroleum Engineers, SPE Paper 131772, 17 p.

Ambrose, W.A., E.C. Potter, and R. Briceno, 2008, An “unconventional” future for natural gas in the United States: Geotimes, v. 53, no. 2, p. 37-41.

Ameen, M.S., 2016, Fracture modes in the Silurian Qusaiba shale play, northern Saudi Arabia and their geomechanical implications: Marine and Petroleum Geology, v. 78, p. 312-355.

American Oil & Gas Reporter, 2006, Shale in Illinois Basin drawing notice: American Oil & Gas Reporter, v. 49, no. 4, p. 180-182.

American Oil & Gas Reporter, 2006, Gas shales take center stage in KOGA technical sessions: American Oil & Gas Reporter, v. 49, no. 8, p. 151-153.

American Oil & Gas Reporter, 2006, Service sector helps on scale, shale: American Oil & Gas Reporter, v. 49, no. 8, p. 146-147.

American Oil & Gas Reporter, 2007, Texas producers seeking next Barnett: American Oil & Gas Reporter, v. 50, no. 7, p. 194-195.

Andrews, R.D., 2007, Stratigraphy, production, and reservoir characteristics of the Caney Shale in southern Oklahoma: Shale Shaker, v. 58, p. 9-25.

Andrews, R.D., 2009, Production decline curves and payout thresholds of horizontal Woodford wells in the Arkoma Basin, Oklahoma (part 1): Shale Shaker, v. 60, p. 103-112.

Andrews, R.D., 2010, Production decline curves and payout thresholds of horizontal Woodford wells in the Arkoma Basin, Oklahoma (part 2): Shale Shaker, v. 60, p. 147-156.

Anna, L.O., and T.A. Cook, 2008, Assessment of the Mowry Shale and Niobrara Formation as continuous hydrocarbon systems, Powder River Basin, Montana and Wyoming: U.S. Geological Survey Open-File Report 2008-1367, 1 sheet. <http://pubs.usgs.gov/of/2008/1367/>

Anonymous, 2005, Arkoma Fayetteville Shale gas play delivering expected variability: Oil & Gas Journal, v. 103.27, p. 35-36.

Anonymous, 2005, Operator to join Arkoma Fayetteville Shale gas play: Oil & Gas Journal, v. 103.29, p. 31-32.

Anonymous, 2006, Bankers targets unconventional gas in Palo Duro Basin: Oil & Gas Journal, v. 104.40, p. 50-51.

Anonymous, 2006, Arkansas Fayetteville gas production rising, two deeper shales explored: Oil & Gas Journal, v. 104.41, p. 34.

Anonymous, 2006, Antrim play offers model for New York: American Oil & Gas Reporter, v. 49, no. 13, p. 155-156.

Anonymous, 2007, Conasauga shale gas play grows in Alabama Valley and Ridge: Oil & Gas Journal, v. 105.7, p. 37.

Anonymous, 2007, Barnett to spar Hugoton for top US natural gas field: Oil & Gas Journal, v. 105.18, p. 30-32.

Anonymous, 2007, West Virginia learns Barnett lessons: American Oil & Gas Reporter, v. 50, no. 3, p. 160-162.

Anonymous, 2007, 3D seismic guides Arkoma Basin Fayetteville play: Oil & Gas Journal, v. 105.30, p. 40.

Anonymous, 2007, Companies unlock secrets to shale: American Oil & Gas Reporter, v. 50, no. 8, p. 169-170.

Anonymous, 2007, Newfield hails Woodford fracs, longer laterals: Oil & Gas Journal, v. 105.47, p. 29-30.

Anonymous, 2007, Service companies stay cutting edge: American Oil & Gas Reporter, v. 50, no. 12, p. 146-148.

Anonymous, 2008, Operators chase gas in three Alabama shale formations: Oil & Gas Journal, v. 106.3, p. 49-50. [Conasauga, Floyd, Chattanooga shales]

Anonymous, 2008, Atlas sees 4-6 tcf recovery from Marcellus Shale: Oil & Gas Journal, v. 106.9, p. 40.

Anonymous, 2008, New York to get Utica shale exploration: Oil & Gas Journal, v. 106.12, p. 41.

Anonymous, 2008, Marcellus begins to meet expectations: American Oil & Gas Reporter, v. 51, no. 3, p. 81-87.

Anonymous, 2008, Ardmore Basin Woodford gas plan takes off: Oil & Gas Journal, v. 106.20, p. 34.

Anonymous, 2008, More operators probe Haynesville gas shale: Oil & Gas Journal, v. 106.23, p. 39.

Anonymous, 2008, Paradox Basin explorer targets two gas shales: Oil & Gas Journal, v. 106.23, p. 39.

Anonymous, 2008, New Brunswick gas shale under evaluation: Oil & Gas Journal, v. 106.23, p. 39.

Anonymous, 2008, Woodford Shale revitalizes Oklahoma: American Oil & Gas Reporter, v. 51, no. 6, p. 164.

Anonymous, 2008, Chesapeake, Plains plan Haynesville venture: Oil & Gas Journal, v. 106.26, p. 42-48.

Anonymous, 2008, Southwestern Energy’s Fayetteville output nears 500 MMcfd: Oil & Gas Journal, v. 106.30, p. 35.

Anonymous, 2008, Association helps Barnett Shale hum: American Oil & Gas Reporter, v. 51, no. 9, p. 163, 187.

Anonymous, 2008, Maverick fracs unlock gas in Pearsall shale: Oil & Gas Journal, v. 106.32, p. 32, 34.

Anonymous, 2008, Appalachian Marcellus, deeper zones eyed: Oil & Gas Journal, v. 106.33, p. 37.

Anonymous, 2008, Reoriented Talisman evaluating unproven Utica, Lorraine shales: Oil & Gas Journal, v. 106.36, p. 46, 48.

Anonymous, 2008, Frac advances key to unconventional gas supply growth: Technology Forum – Production Stimulation, supplement to Oil & Gas Journal, v. 106.36, p. 4-8.

Anonymous, 2008, Non-frac stimulation technologies mark progress too: Technology Forum – Production Stimulation, supplement to Oil & Gas Journal, v. 106.36, p. 9-11.

Anonymous, 2008, Atlas Energy’s Marcellus program delivers 60 MMcfd in Pennsylvania: Oil & Gas Journal, v. 106.39, p. 38.

Anonymous, 2008, BC’s Beaver River field flows gas from shales: Oil & Gas Journal, v. 106.40, p. 42, 44.

Anonymous, 2008, Marcellus Shale still excites industry: American Oil & Gas Reporter, v. 51, no. 12, p. 198-199.

Anonymous, 2008, Study analyzes nine US, Canada shale gas plays: Oil & Gas Journal, v. 106.42, p. 45-51.

Anonymous, 2008, Woodford Shale play forms up in Oklahoma Anadarko Basin: Oil & Gas Journal, v. 106.43, p. 38.

Anonymous, 2008, Atlas to pursue New Albany Shale in Indiana: Oil & Gas Journal, v. 106.43, p. 39.

Anonymous, 2008, Water controls confound the Marcellus: American Oil & Gas Reporter, v. 51, no. 14, p. 154-155.

Anonymous, 2008, Southwestern to probe new areas, won’t accelerate Fayetteville in ’09: Oil & Gas Journal, v. 106.48, p. 32-33.

Anonymous, 2009, Barrett starts Paradox Gothic shale gas flow: Oil & Gas Journal, v. 107.5, p. 40, 42.

Anonymous, 2009, Seneca third largest Marcellus shale player: Oil & Gas Journal, v. 107.5, p. 42.

Anonymous, 2009, Q&A Haynesville tech primer: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 8.

Anonymous, 2009, Q&A Gene Powell: Barnett guru: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 18-19.

Anonymous, 2009, N.Y. congressman seeks stricter control over Marcellus wells: American Oil & Gas Reporter, v. 52, no. 1, p. 25-26.

Anonymous, 2009, Eagle Ford viewed among top US shale gas plays: Oil & Gas Journal, v. 107.17, p. 54.

Anonymous, 2009, Regional spotlight: Appalachian Basin: Oil and Gas Investor, v. 29, no. 5, p. 17.

Anonymous, 2009, Marcellus players tout its economics, vast productive area: Oil and Gas Investor, v. 29, no. 5, p. 28, 30.

Anonymous, 2009, Marcellus raises regulatory questions: American Oil & Gas Reporter, v. 52, no. 5, p. 146-149.

Anonymous, 2009, Shale plays push up US gas resource estimate: Oil & Gas Journal, v. 107.25, p. 36.

Anonymous, 2009, Quebec shales due tests after TBR yields gas: Oil & Gas Journal, v. 107.25, p. 38.

Anonymous, 2009, St. Mary Land tests Eagle Ford in Webb County: Oil & Gas Journal, v. 107.25, p. 38.

Anonymous, 2009, East Resources gets funds for Marcellus work: Oil & Gas Journal, v. 107.25, p. 38.

Anonymous, 2009, Corridor sees 67 tcf in New Brunswick shale: Oil & Gas Journal, v. 107.26, p. 35.

Anonymous, 2009, Drastic improvements needed in shale gas: Oil & Gas Journal, v. 107.33, p. 36.

Anonymous, 2009, ConocoPhillips, Lane to explore Polish shale gas: Oil & Gas Journal, v. 107.35, p. 52.

Anonymous, 2009, Fayetteville Shale shines light on state with a long history: American Oil & Gas Reporter, v. 52, no. 9, p. 143-144, 151.

Anonymous, 2009, New York’s energy plan sees vital role for Marcellus Shale: American Oil & Gas Reporter, v. 52, no. 10, p. 139.

Anonymous, 2009, Eagle Ford shale McMullen joint venture forms: Oil & Gas Journal, v. 107.45, p. 39.

Anonymous, 2009, Canada looks to shales for boost to gas supply: Oil & Gas Journal, v. 107.46, p. 18-22.

Anonymous, 2009, Water issues part of Marcellus activity: American Oil & Gas Reporter, v. 52, no. 12, p. 144-145.

Anonymous, 2010, Regional spotlight: Eagle Ford: Oil and Gas Investor, v. 30, no. 2, p. 17.

Anonymous, 2010, EOG tests Bossier pay on Haynesville spread: Oil & Gas Journal, v. 108.7, p. 35.

Anonymous, 2010, EXCO-BG ramps up Haynesville gas output: Oil & Gas Journal, v. 108.8, p. 31.

Anonymous, 2010, Chesapeake cements position in six onshore US gas plays: Oil & Gas Journal, v. 108.8, p. 37-38.

Anonymous, 2010, Marcellus E&P, transportation programs ramp up: Oil & Gas Journal, v. 108.8, p. 38.

Anonymous, 2010, IGas to exploit shale gas resource off Wales: Oil & Gas Journal, v. 108.8, p. 38-39.

Anonymous, 2010, Michigan Basin Utica shale gas play may ignite: Oil & Gas Journal, v. 108.12, p. 45.

Anonymous, 2010, EOG sees Eagle Ford shale as major US oil discovery: Oil & Gas Journal, v. 108.14, p. 35.

Anonymous, 2010, Shale gas permits awarded in southern France: Oil & Gas Journal, v. 108.17, p. 33.

Anonymous, 2010, Impact of shale plays on LPG supply remains uncertain: Oil & Gas Journal, v. 108.20, p. 65.

Anonymous, 2010, EIA outlook foresees shale growth: American Oil & Gas Reporter, v. 53, no. 8, p. 232.

Anonymous, 2010, Misrepresenting shale gas: Oil & Gas Journal, v. 108.38, p. 16.

Anonymous, 2010, WoodMac: Majors buying into shale gas plays: Oil & Gas Journal, v. 108.38, p. 18-20.

Anonymous, 2010, New York gas producers work under new market conditions: American Oil & Gas Reporter,v. 53, no. 11, p. 132-133.

Anonymous, 2010, Marcellus attracting variety of interest: American Oil & Gas Reporter,v. 53, no. 11, p. 140-141.

Anonymous, 2010, Industry launches frac counterattack: American Oil & Gas Reporter,v. 53, no. 11, p. 145.

Anonymous, 2010, Fracturing gives industry horsepower: American Oil & Gas Reporter,v. 53, no. 11, p. 154-157.

Anonymous, 2010, Regional spotlight: Permian Basin: Oil and Gas Investor, v. 30, no. 11, p. 15.

Anonymous, 2011, Q&A: Emergence of shale plays leads to transformative shift for independent operators: American Oil & Gas Reporter, v. 54, no. 1, p. 38-59. (interviews with Aubrey McClendon, Jeff Hume, Jeffrey Ventura, and Ralph A. Hill)

Anonymous, 2011, Polish environmental ministry promises no roadblocks to shale gas: World Oil, v. 232, no. 4, p. T149 to T150.

Anonymous, 2011, NGL production from US shale plays grows: Oil & Gas Journal, v. 109.13, p. 100-101.

Anonymous, 2011, Canada sees 78 tcf marketable in Horn River Basin: Oil & Gas Journal, v. 109.15, p. 56-58.

Anonymous, 2011, DOE shale report mixed for industry: American Oil & Gas Reporter, v. 54, no. 9, p. 36, 38.

Anonymous, 2011, Oil & Gas resource plays transforming America’s energy supply picture: American Oil & Gas Reporter, v. 54, no. 9, p. 40-53.

Anonymous, 2011, Regional spotlight: Woodbine-Eagle Ford: Oil and Gas Investor, v. 31, no. 12, p. 15.

Anonymous, 2011, Legal issues abound in Marcellus, Utica: American Oil & Gas Reporter, v. 54, no. 11, p. 140-151.

Anonymous, 2012, Texas Eagle Ford drilling, production spooling up: Oil & Gas Journal, v. 110.2, p. 46-47.

Anonymous, 2012, Wealth of opportunities still emerging in new era of unconventional plays: American Oil & Gas Reporter, v. 55, no. 1, p. 48-61.

Anonymous, 2012, USGS assesses North Slope’s shales: American Oil & Gas Reporter, v. 55, no. 3, p. 99. <http://energy.usgs.gov/Miscellaneous/Articles/tabid/98/ID/146/Shale-Gas-and-Shale-Oil-Resource-Potential-of-the-Alaska-North-Slope.aspx>

Anonymous, 2012, Obama launches shale gas initiative: American Oil & Gas Reporter, v. 55, no. 5, p. 37.

Anonymous, 2012, Marcellus rules effective, study says: American Oil & Gas Reporter, v. 55, no. 8, p. 208-209.

Anonymous, 2012, USGS estimates amount of gas resources in Utica Shale: American Oil & Gas Reporter, v. 55, no. 11, p. 158-159.

Anonymous, 2013, EIA sees big global shale resources: American Oil & Gas Reporter, v. 56, no. 7, p. 31-32.

Anonymous, 2013, Vast resource estimated in UK’s Bowland-Hodder shale: Oil & Gas Journal, v. 111.8, p. 58-61.

Anonymous, 2013, Father of shale fracturing, George Mitchell, passes on: American Oil & Gas Reporter, v. 56, no. 8, p. 19.

Anonymous, 2014, Study highlights Pennsylvania’s shale gas development boom: Oil & Gas Journal, v. 112.8b, p. 20-21.

Anonymous, 2015, EIA: Argentina, China lead shale development outside North America: Oil & Gas Journal, v. 113.7, p. 40-41.

Anonymous, 2016, Shale plays revolutionize U.S. production: World Oil, v. 237, no. 6, p. 34.

Anonymous, 2018, WoodMac: Chinese shale gas production to reach 17 billion cu m in 2020: Oil & Gas Journal, v. 116.5, p. 21-22.

Anovitz, L.M., D.R. Cole, J.M. Sheets, A. Swift, H.W. Elston, S. Welch, S.J. Chipera, K.C. Littrell, D.F.R. Mildner, and M.J. Wasbrough, 2015, Effects of maturation on multiscale (nanometer to millimeter) porosity in the Eagle Ford Shale: Interpretation, v. 3, no. 3, p. SU59-SU70.

Apostolopoulou, M., R. Dusterhoft, R. Day, M. Stamatakis, M.-O. Coppens, and A. Striolo, 2019, Estimating permeability in shales and other heterogeneous porous media: Deterministic vs. stochastic investigations: International Journal of Coal Geology, v. 205, p. 140-154.

Ardakani, O.H., H. Sanei, D. Lavoie, Z. Chen, and C. Jiang, 2015, Geochemical and petrographic characterization of the Upper Ordovician Utica Shale, southern Quebec, Canada: International Journal of Coal Geology, v. 138, p. 83-94.

Ardakani, O.H., H. Sanei, A. Ghanizadeh, M. McMechan, F. Ferri, and C.R. Clarkson, 2017, Hydrocarbon potential and reservoir characteristics of Lower Cretaceous Garbutt Formation, Liard Basin Canada: Fuel, v. 209, p. 274-289.

Ardakani, O.H., H. Sanei, A. Ghanizadeh, D. Lavoie, Z. Chen, and C.R. Clarkson, 2018, Do all fractions of organic matter contribute equally in shale porosity? A case study from Upper Ordovician Utica Shale, southern Quebec, Canada: Marine and Petroleum Geology, v. 92, p. 794-808.

Ardakani, O.H., H. Sanei, S.E. Jackson, and I.S. Al-Aasm, 2020, Geochemistry of dolomite fluorescence in response to thermal maturity: An example from Upper Ordovician Utica Shale of southern Québec, Canada: International Journal of Coal Geology, v. 231, 103593.

Arnold, K., 2016, Maximizing efficiencies in an era of evolution: World Oil, v. 237, no. 9, p. 63-66.

Arnold, L.A., 2010, Regional depositional trends in the Devonian Geneseo/Burket black shale based on gamma ray-density characteristics: State College, PA, The Pennsylvania State University, unpublished M.S. thesis, 133 p.

Arthur, D., and D. Cornue, 2010, Techologies reduce pad size, waste: American Oil & Gas Reporter, v. 53, no. 8, p. 94-99.

Arthur, J.D., B. Bohm, and M. Layne, 2009, Considerations for development of Marcellus Shale gas: World Oil, v. 230, no. 7, p. 65-69.

Arthur, J.D., 2010, A cooperative model for US shale gas development: World Oil, v. 231, no. 6, p. D-77.

Aruga, K., 2016, The U.S. shale gas revolution and its effect on international gas markets: Journal of Unconventional Oil and Gas Resources, v. 14, p. 1-5.

Ascent Energy, 2005, Woodford/Caney Shale, six wells—OGS Sample Library: Prepared by Ticora Geosciences, Arvada, Colorado, Final Report Reservoir Property Analysis for Ascent Energy, variously paginated. (available at OGS Web site: <http://www.ogs.ou.edu/oilgas.php>)

Ashley, T.L., 2014, Lithology, diagenesis, and depositional environment of the (Mississippian) Barnett Shale and limestone in the Dangelmayr A#7 core in the Fort Worth Basin, Cooke County, Texas: Fort Worth, TX, Texas Christian University, unpublished M.S. thesis.

Ashraf, M., H. Alvarez, F. Dubost, C. Hopkins, and C. Levesque, 2011, Unconventional gas 2.0: unlocking a global potential: Hart Energy Publishing, E&P, v. 84, no. 6, p. 48-50.

Atchley, S.C., B.T. Crass, and K.C. Prince, 2021, The prediction of organic-rich reservoir facies within the Late Pennsylvanian Cline shale (also known as Wolfcamp D), Midland Basin, Texas: AAPG Bulletin, v. 105, p. 29-52.

Atkins, L., 2011, Shale-gas economics: Oil and Gas Investor, v. 31, no. 3, p. 19.

Atkins, L., 2011, Unconventional shale gas could soon be a global resource: Hart Energy Publishing, E&P, v. 84, no. 3, p. 32-39.

Atkins, L., 2012, Europe’s shale: too soon to write off: Oil and Gas Investor, v. 32, no. 5, p. 21.

Atkins, L., 2012, Argentina: shale, expropriation, potential: Oil and Gas Investor, v. 32, no. 7, p. 19.

Atkins, L., 2013, The Permian Wolfcamp: Oil and Gas Investor, v. 33, no. 4, p. 21.

Atkins, L., 2014, Argentina’s Vaca Muerta Shale: Hart Energy Publishing, E&P, v. 87, no. 7, p. 48-49.

Avanzini, A., P. Balossino, M. Brignoli, E. Spelta, and C. Tarchiani, 2016, Lithologic and geomechanical facies classification for sweet spot identification in gas shale reservoir: Interpretation, v. 4, no. 3, p. SL21-SL31. (Barnett Shale)

Avary, K.L., and K. Schmid, 2012, The Marcellus Shale….By the numbers: AAPG Search and Discovery Article #10447, 31 p. <http://www.searchanddiscovery.com/documents/2012/10447avary/ndx_avary.pdf>

Avila, J., 1976, Devonian shale as source of gas, in Natural gas from unconventional geologic sources: Washington, D.C., National Academy of Sciences, p. 73-85.

Awakessien, I.A., 2009, Microseismic sensitivity to hydraulic fracturing damage: A study from the Barnett Shale, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 88 p.

Awan, R.S., C. Liu, N. Aadil, Q. Yasin, A. Salaam, A. Hussain, S. Yang, A.K. Jadoon, Y. Wu, and M.A. Gul, 2021, Organic geochemical evaluation of Cretaceous Talhar Shale for shale oil and gas potential from Lower Indus Basin, Pakistan: Journal of Petroleum Science and Engineering, v. 200, 108404.

Aydin, A., 2014, Failure modes of shales and their implications for natural and man-made fracture assemblages: AAPG Bulletin, v. 98, p. 2391-2409.

Ayers, K., K. Aminian, and S. Ameri, 2013, University research examines how completion variables influence production, part 3: American Oil & Gas Reporter, v. 56, no. 3, p. 74-83.

Bachrach, R., and C. Sayers, 2014, New method characterizes naturally fractured reservoirs: Hart Energy Publishing, E&P, v. 87, no. 8, p. 72-74. (orthotropic seismic inversion)

Badics, B., and I. Vetö, 2012, Source rocks and petroleum systems in the Hungarian part of the Pannonian Basin: The potential for shale gas and shale oil plays: Marine and Petroleum Geology, v. 31, p. 53-69.

Bagnall, W.D., and W.M. Ryan, 1976, The geology, reserves, and production characteristics of the Devonian shale in southwestern West Virginia, in R.C. Shumaker and W.K. Overbey, Jr., eds., Devonian shale production and potential: Proceedings of the Seventh Appalachian Petroleum Geology Symposium, Morgantown Energy Research Center, MERC/SP-76/2, p. 41-53.

Bahadur, J., A.P. Radlinski, Y.B. Melnichenko, M. Mastalerz, and A. Schimmelmann, 2015, Small-angle and ultrasmall-angle neutron scattering (SANS/USANS) study of New Albany shale: a treatise on microporosity: Energy Fuel, v. 29, p. 567-576.

Bahadur, J., L.F. Ruppert, V. Pipich, R. Sakurovs, and Y.B. Melnichenko, 2018, Porosity of the Marcellus Shale: A contrast matching small-angle neutron scattering study: International Journal of Coal Geology, v. 188, p. 156-164.

Bai, B., M. Elgmati, H. Zhang, and M. Wei, 2013, Rock characterization of Fayetteville shale gas plays: Fuel, v. 105, p. 645-652.

Bai, B., K. Carlson, A. Prior, and C. Douglas, 2015, Sources of variability in flowback and produced water volumes from shale oil and gas wells: Journal of Unconventional Oil and Gas Resources, v. 12, p. 1-5. (Niobrara)

Baig, A., S. Bowman, and K. Jeziorski, 2014, Microseismic aids in fracturing shale: American Oil & Gas Reporter, v. 57, no. 9, p. 103-109.

Baig, I., J.I. Faleide, N.H. Mondol, and J. Jahren, 2019, Burial and exhumation history controls on shale compaction and thermal maturity along the Norwegian North Sea basin margin areas: Marine and Petroleum Geology, v. 104, p. 61-85.

Baihly, J., R. Altman, R. Malpani, and F. Luo, 2011, Study assesses shale decline rates: American Oil & Gas Reporter, v. 54, no. 5, p. 114-121.

Baker, G., M. Nickolaus, and P. Jehn, 2012, FracFocus.org website answers call for disclosure: American Oil & Gas Reporter, v. 55, no. 3, p. 42, 44, 46.

Baker, R., Y. Shen, J. Zhang, and S. Robertson, 2010, Shale energy: Developing the Barnett—Difficult directional intervals in Barnett spur development of new PDC bit design: World Oil, v. 231, no. 8, p. D-95 to D-98.

Balashov, V.N., T. Engelder, X. Gu, M.S. Fantle, and S.L. Brantley, 2015, A model describing flowback chemistry changes with time after Marcellus Shale hydraulic fracturing: AAPG Bulletin, v. 99, p. 143-154.

Baldassare, F.J., M.A. McCaffrey, and J.A. Harper, 2014, A geochemical context for stray gas investigations in the northern Appalachian Basin: Implications of analyses of natural gases from Neogenen-through Devonian-age strata: AAPG Bulletin, v. 98, p. 341-372. (Marcellus)

Ball, E., 2014, Fracturing technology continues to advance: Shale Technology Review, supplement to World Oil, v. 235, no. 7, p. S-139 to S-142.

Bamijoko, A.O., 2010, Spectrometry and geochemical investigation of selected outcrops of the Chattanooga Shale in the Ozark region of North America: Stillwater, OK, Oklahoma State University, unpublished M.S. thesis.

Barbee, D., 2013, China woos shale-gas developers as energy demands remain robust: Oil and Gas Investor, v. 33, no. 1, p. 38-42.

Barbee, D., 2015, Texas bans fracking ban: Oil and Gas Investor, v. 35, no. 6, p. 9.

Barbee, D., 2015, Refracking debate: Game-changer, or value-destroyer?: Oil and Gas Investor, v. 35, no. 6, p. 21-22.

Barbee, D., 2015, Shale’s M&A targets: Oil and Gas Investor, v. 35, no. 9, p. 15.

Barrows, M.H., and R.M. Cluff, 1984, New Albany Shale Group (Devonian-Mississippian) source rocks and hydrocarbon generation in the Illinois Basin, in G. Demaison and R.J. Murris, eds., Petroleum geochemistry and basin evaluation: AAPG Memoir 35, p. 111-138.

Barry, B., and M.S. Klima, 2013, Characterization of Marcellus Shale natural gas well drill cuttings: Journal of Unconventional Oil and Gas Resources, v. 1-2, p. 9-17.

Barth, J.O., K.M. Ryan, M.J. Mayerhofer, and N.A. Stegent, 2012, Frac diagnostics key in Marcellus wells: American Oil & Gas Reporter, v. 55, no. 5, p. 70-79.

Baruch, E.T., 2009, Seismic sequence stratigraphy of the Barnett Shale, southwestern part of Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 76 p.

Baruch, E.T., R.M. Slatt, and K.J. Marfurt, 2012, Seismic stratigraphic analysis of the Barnett Shale and Ellenburger unconformity southwest of the core area of the Newark East Field, Fort Worth Basin, Texas, in J. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 403-418.

Barzola, G.J., P. Clarke, N. Basu, and H. Bello, 2012, Integrating seismic, well data delineates performance drivers across Eagle Ford Shale play: American Oil & Gas Reporter, v. 55, no. 7, p. 118-129. (condensate window is most economic)

Bates, M., 2015, New shale in town: Oil and Gas Investor, v. 35, no. 3, p. 21. (Springer shale)

Baur, F., 2019, Predicting petroleum gravity with basin modeling: New kinetic models: AAPG Bulletin, v. 103, p. 1811-1837.

Baur, F.U.M., B.J. Katz, and G. Gaus, 2020, Gas sorption in source rocks — A short discussion: International Journal of Coal Geology, v. 219, 103372.

Bazilian, M., A.R. Brandt, L. Billman, G. Heath, J. Logan, M. Mann, M. Melaina, P. Statwick, D. Arent, and S.M. Benson, 2014, Ensuring benefits from North American shale gas development: Towards a research agenda: Journal of Unconventional Oil and Gas Resources, v. 7, p. 71-74.

Bazan, L.W., S.D. Larkin, M.G. Lattibeaudiere, T.T. Palisch, R. Duenckel, and M. Chapman, 2011, Advanced completion design, fracture modeling technologies optimize Eagle Ford performance: American Oil & Gas Reporter, v. 54, no. 12, p. 96-109.

Beaubouef, B., 2009, Haynesville drives new pipeline development: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 82-85.

Beaubouef, B., 2009, Arkoma Basin activity spurs pipeline expansion: Houston, Hart Energy Publishing, Arkoma Playbook, p. 46-48.

Beaubouef, B., 2009, Pipelines expanding to move Marcellus gas: Houston, Hart Energy Publishing, Marcellus Playbook, p. 78-82.

Beaubouef, B., 2009, Takeaway capacity in place: Houston, Hart Energy Publishing, Barnett Playbook, p. 56-62.

Beaubouef, B., 2010, Shale-gas take-away; lining up the shales: Oil and Gas Investor, v. 30, no. 5, p. 69-70.

Beaubouef, B., 2010, Eagle Ford activity creates pipeline opportunities: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 56-59.

Bednarz, M., and D. McIlroy, 2012, Effect of phycosiphoniform burrows on shale hydrocarbon reservoir quality: AAPG Bulletin, v. 96, p. 1957-1980.

Bednarz, M., and D. McIlroy, 2015, Organism-sediment interactions in shale-hydrocarbon reservoir facies — Three-dimensional reconstruction of complex ichnofabric geometries and pore-networks: International Journal of Coal Geology, v. 150-151, p. 238-251.

Begum, M., M.R. Yassin, and H. Dehghanpour, 2019, Effect of kerogen maturity on organic shale wettability: A Duvernay case study: Marine and Petroleum Geology, v. 110, p. 483-496.

Behar, F., and D.M. Jarvie, 2013, Compositional modeling of gas generation from two shale gas resource systems: Barnett Shale (United States) and Posidonia Shale (Germany), in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 25-44.

Behrang, A., and A. Kantzas, 2016, A hybrid methodology to predict gas permeability in nanoscale organic materials; a combination of fractal theory, kinetic theory of gases and Boltzmann transport equation: Fuel, v. 188, p. 239-245.

Beims, T., 2007, Bustling DFW Airport creates unlikely setting for high-fold 3-D survey to image Barnett Shale: American Oil & Gas Reporter, v. 50, no. 7, p. 94-102.

Beims, T., 2009, Drilling activity downswing signals future corrections in gas supply, pricing: American Oil & Gas Reporter, v. 52, no. 5, p. 66-81.

Beims, T., 2009, Shale, tight sands ‘mega’ plays changing behavior of North American gas market: American Oil & Gas Reporter, v. 52, no. 12, p. 48-56.

Beims, T., 2010, Next-generation systems optimize WBM performance in horizontal shale plays: American Oil & Gas Reporter, v. 53, no. 8, p. 78-91.

Beims, T., 2011, Multifaceted strategy drives Range’s success in Marcellus Shale play: American Oil & Gas Reporter, v. 54, no. 3, p. 66-76.

Beims, T., 2016, Horizontal drilling part I: Purple Hayes No. 1H ushers in step changes in lateral length, well cost: American Oil & Gas Reporter, v. 59, no. 7, p. 52-60. (Utica)

Belhadi, J., H. Ramakrishnan, and R. Yuyan, 2011, Approach optimizes frac treatments: American Oil & Gas Reporter, v. 54, no. 7, p. 81-87.

Bellman, L.M.W., 2018, Integrated shale-gas reservoir characterization: A case study incorporating multicomponent seismic data: Interpretation, v. 6, no. 2, p. SE23-SE37.

Belyadi, H., J. Yuyi, M. Ahmad, and J. Wyatt, 2017, Study evaluates optimal well spacing in deep, dry gas Utica: American Oil & Gas Reporter, v. 60, no. 9, p. 72-78.

Benavidez, A., 2017, Get the Scoop on the Scoop/Stack, in SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, p. 12-23.

Benson, M., 2008, Potential of Marcellus Shale gains attention in Virginia: American Oil & Gas Reporter, v. 51, no. 7, p. 124-126.

Benson, M., 2008, Marcellus Shale pushes state into high gear: American Oil & Gas Reporter, v. 51, no. 9, p. 164-168.

Benton, A.K., 2013, An integrated diagenetic and paleomagnetic study of the Haynesville Shale, Harrison County, Texas: Norman, University of Oklahoma, unpublished M.S. thesis.

Berch, H., and J. Nunn, 2014, Predicting potential unconventional production in the Tuscaloosa marine shale play using thermal modelling and log overlay analysis: GCAGS Journal, v. 3, p. 69-78.

Bereskin, S.R., and J.A. Kieschnick, 2006, Depositional, diagenetic, and original (inorganic) compositional influences on thermogenic shale gas production, western North America (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 112.

Bergen, J.A., T.M. Boesiger, and J.J. Pospichal, 2013, Low-latitude Oxfordian to early Berriasian nannofossil biostratigraphy and its application to the subsurface of eastern Texas, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 69-102.

Berman, A., 2007, Plank road fever and the Barnett Shale: World Oil, v. 228, no. 4, p. 23-24.

Berman, A., 2007, The Fayetteville Shale play: an early evaluation: World Oil, v. 228, no. 8, p. 23.

Berman, A., 2007, Reader feedback on the Fayetteville Shale: World Oil, v. 228, no. 10, p. 19.

Berman, A., 2007, Revisiting the Barnett Shale: World Oil, v. 228, no. 11, p. 19, 114.

Berman, A., 2008, The Haynesville Shale sizzles while the Barnett cools: World Oil, v. 229, no. 9, p. 23.

Berman, A., 2009, Shale plays and lower natural gas prices: a time for critical thinking: World Oil, v. 230, no. 1, p. 15.

Berman, A., 2009, Haynesville sizzle could fizzle: World Oil, v. 230, no. 4, p. 19.

Berman, A., 2009, A long recovery for gas prices: revisiting the Haynesville Shale: World Oil, v. 230, no. 6, p. 15.

Berman, A., 2009, Lessons from the Barnett Shale imply caution in other shale plays: World Oil, v. 230, no. 8, p. 17.

Berman, A., and L. Pittinger, 2009, Realities of shale play reserves: Examples from the Fayetteville Shale: World Oil, v. 230, no. 9, p. 15.

Berman, A., and L. Pittinger, 2009, A Haynesville Shale symposium: World Oil, v. 230, no. 10, p. 15.

Berman, S., 2009, The economics of the Arkoma shales: Houston, Hart Energy Publishing, Arkoma Playbook, p. 50-53.

Berman, S., 2010, Sweet economics; unconventional resources could equal conventional resources: Houston, Hart Energy Publishing, Permian Basin: the playbook, p. 72-74.

Bernard, S., B. Horsfield, H.-M. Schulz, A. Schreiber, R. Wirth, T.T.A. Vu, F. Perssen, S. Könitzer, H. Volk, N. Sherwood, and D. Fuentes, 2010, Multi-scale detection of organic and inorganic signatures provides insights into gas shale properties and evolution: Chemie der Erde-Geochemistry, v. 70, no. S3, p. 119-133.

Bernard, S., B. Horsfield, H.-M. Schulz, R. Wirth, A. Schreiber, and N. Sherwood, 2012, Geochemical evolution of organic-rich shales with increasing maturity: A STXM and TEM study of the Posidonia Shale (Lower Toarcian, northern Germany): Marine and Petroleum Geology, v. 31, p. 70-89.

Bernard, S., R. Wirth, A. Schreiber, H.-M. Schulz, and B. Horsfield, 2012, Formation of nanoporous pyrobitumen residues during maturation of the Barnett Shale (Fort Worth Basin): International Journal of Coal Geology, v. 103, p. 3-11.

Bernard, S., L. Brown, R. Wirth, A. Schreiber, H.-M. Schulz, B. Horsfield, A.C. Aplin, and E.J. Mathia, 2013, FIB-SEM and TEM investigations of an organic-rich shale maturation series from the Lower Toarcian Posidonia Shale, Germany: Nanoscale pore system and fluid-rock interactions, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 53-66.

Bernard, S., and B. Horsfield, 2014, Reply to comment on “Formation of nanoporous pyrobitumen residues during maturation of the Barnett Shale (Fort Worth Basin)”: International Journal of Coal Geology, v. 127, p. 114-115.

Bernard, S., and B. Horsfield, 2014, Thermal maturation of gas shale systems: Annual Review of Earth and Planetary Sciences, v. 42, p. 635-651.

Bertassoli, D.J., Jr., H.O. Sawakuchi, N.S. Almeida, B. Castanheira, V.A.T. Alem, M.G.P. Camargo, A.V. Krusche, S. Brochsztain, and A.O. Sawakuchi, 2016, Biogenic methane and carbon dioxide generation in organic-rich shales from southeastern Brazil: International Journal of Coal Geology, v. 162, p. 1-13.

Bhattacharya, G., 2016, Natural gas, unconventional resources can assist India in meeting future energy demand: Oil & Gas Journal, v. 114.11, p. 46-51.

Bhowmik, S., and P. Dutta, 2019, A study on the effect of gas shale composition and pore structure on methane sorption: Journal of Natural Gas Science and Engineering, v. 62, p. 144-156.

Binnion, M., 2012, How the technical differences between shale gas and conventional gas projects lead to a new business model being required to be successful: Marine and Petroleum Geology, v. 31, p. 3-7.

Birkelo, B., and K. Cieslik, 2012, Microseismic data illuminate fractures in the Montney: Hart Energy Publishing, E&P, v. 85, no. 9, p. 64-69.

Bishop, R.S., R.A. Baggot, W.L. Kelley, and R.E. Fargo, 2012, U.S. shale oil – gas production potential—1. Shale oil, gas output may reduce, not replace, US crude imports: Oil & Gas Journal, v. 110.8, p. 40-45.

Bisnovat, K., Y.H. Hatzor, H.J. Vinegar, S.V. Nguyen, V. Palchik, and S. Feinstein, 2015, Mechanical and petrophysical behavior of organic-rich chalk from the Judea Plains, Israel: Marine and Petroleum Geology, v. 64, p. 152-164.

Biswas, D., 2011, SGPM [Shale Gas Predictive Modeling] enhances production forecasts: American Oil & Gas Reporter, v. 54, no. 5, p. 109-113.

Biswas, P., and S. Ley, 2014, Bringing seismic ideas to acoustic logging: Hart Energy Publishing, E&P, v. 87, no. 10, p. 46, 48.

Bitto, R., 2014, Water management presents challenges, brings opportunities: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-85 to S-91.

Bitto, R., 2014, Finding sweet spots and optimizing completions through G&G advances: Shale Technology Review, supplement to World Oil, v. 235, no. 7, p. S-129 to S-133.

Bjørlykke, K., 2015, Unconventional hydrocarbons: oil shales, heavy oil, tar sands, shale oil, shale gas and gas hydrates, in K. Bjørlykke, ed., Petroleum geoscience: From sedimentary environments to rock physics (second edition): Springer-Verlag, New York, p. 581-590.

Blackim, K.N., 2008, Shales, tight sands facing challenges: American Oil & Gas Reporter, v. 51, no. 12, p. 86-90.

Blauch, M., and B. Grieser, 2007, Special techniques tap shale gas: Hart Energy Publishing, E&P, v. 80, no. 3, p. 89-93.

Blauch, M., N. Houston, M. Seyman, and R. Reese, 2009, Technique reuses frac water in shale: American Oil & Gas Reporter, v. 52, no. 9, p. 103-107.

Blood, D.R., 2011, Sequence stratigraphy crucial to lateral placement in Marcellus Shale play, part two: American Oil & Gas Reporter, v. 54, no. 8, p. 52-60.

Boak, J. and R. Kleinberg, 2016, Shale- and mudstone-hosted oil and gas, in M. Riazi, ed., Exploration and Production of Petroleum and Natural Gas, MNL7320140013: ASTM International, West Conshohocken, PA, p. 373-394. <https://doi.org/10.1520/MNL7320140013>

Boak, J., and R. Kleinberg, 2020, Shale gas, tight oil, shale oil and hydraulic fracturing, in T.M. Letcher, ed., Future energy: Improved, sustainable and clean options for our planet, third edition: Elsevier, Cambridge, MA, p. 67-95.

Boardman, D.R., II, J. Puckette, and I. Çemen, 2008, Late Devonian-Early Permian organic-rich gas shales of the North American Midcontinent (abstract): GSA South-Central Section, Abstracts with Programs, p. 5.

Bodziak, R., K. Clemons, A. Stephens, and R. Meek, 2014, The role of seismic attributes in understanding the hydraulically fracturable limits and reservoir performance in shale reservoirs: An example from the Eagle Ford Shale, south Texas: AAPG Bulletin, v. 98, p. 2217-2235.

Boggs, J., J. Hinton, G. Boyd, and P. Rottler, 2010, Comprehensive well planning pays off: American Oil & Gas Reporter, v. 53, no. 1, p. 51-53. (Marcellus Shale)

Boggs, J., J. Pauley, A. Al-Essa, and J. Guzman, 2014, Technologies enable ultralong laterals: American Oil & Gas Reporter, v. 57, no. 9, p. 65-69.

Booher, M.T., W.R. Whitman, and D.M. Kavouras, 2014, Regulatory overview; States lead way in shale regulations: American Oil & Gas Reporter, v. 57, no. 7, p. 172-174.

Borden, K., 2013, Private equity flocks to Marcellus and Utica shale plays: Oil and Gas Investor, v. 33, no. 1, p. 59.

Borges, G., 2007, Seismic sequence stratigraphic interpretation of Barnett Shale at Newark East field in Fort Worth Basin, Texas: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 72 p.

Borjigen, T., J. Qin, X. Fu, Y. Yang, and L. Lu, 2014, Marine hydrocarbon source rocks of the Upper Permian Longtan Formation and their contribution to gas accumulation in the northeastern Sichuan Basin, southwest China: Marine and Petroleum Geology, v. 57, p. 160-172.

Borkloe, J.K., R. Pan, J. Jin, E.W. Nyantakyi, and J. Meng, 2016, Evaluation of shale gas potential of Cambrian Jiulaodong Formation in Wei-201 well block in Sichuan Basin, China: Interpretation, v. 4, no. 2, p. T123-T140.

Borrego, A.G., A. López Garcia, and O. Merino-Tomé, 2018, Petrographic and geochemical characteristics of organic-rich Mississippian black shales in the north of Spain: Vegamián Formation, Cantabrian Zone: International Journal of Coal Geology, v. 190, p. 126-145.

Borrok, D.M., W. Yang, M. Wei, and M. Hokhtari, 2019, Heterogeneity of the mineralogy and organic content of the Tuscaloosa marine shale: Marine and Petroleum Geology, v. 109, p. 717-731.

Borstmayer, R., N. Stegent, A. Wagner, and J. Mullen, 2011, Approach optimizes completion design: American Oil & Gas Reporter, v. 54, no. 8, p. 79-88.

Boswell, R., 1996, Play UDs: Upper Devonian black shales, in J.B. Roen and B.J. Walker, eds., The atlas of major Appalachian gas plays: West Virginia Geological and Economic Survey Publication V-25, p. 93-99.

Bouffard, B.M., 2012, Unlocking shale’s economic potential with upfront planning, collaboration: Hart Energy Publishing, E&P, v. 85, no. 10, p. 140.

Boughal, K., 2008, Unconventional plays grow in number after Barnett Shale blazed the way: World Oil, v. 229, no. 8, p. 77-81.

Bowen, K., 2017, Shale plays require cost-effective proppant source and deliverymethod: World Oil, v. 238, no. 8, p. 27.

Bowker, K.A., 2003, The Barnett Shale play, Fort Worth Basin (abstract): AAPG Mid-Continent Section Meeting, Official Program Book, p. 25.

Bowker, K.A., 2003, Recent development of the Barnett Shale play, Fort Worth Basin: West Texas Geological Society Bulletin, v. 42, no. 6, p. 4-9, 11.

Bowker, K.A., 2004, The Barnett Shale (Ft. Worth Basin) as an exploration model (abstract): Denver, AAPG Rocky Mountain Section Meeting, Rocky Mountain Natural Gas 2004, Program and Abstracts, p. 92.

Bowker, K.A., 2005, The Barnett Shale play, Fort Worth Basin, in B.J. Cardott, ed., Unconventional energy resources in the southern Midcontinent, 2004 symposium: Oklahoma Geological Survey Circular 110, p. 35.

Bowker, K.A., G. Moretti, Jr., and L. Utley, 2007, Fayetteville maturing: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 14-15.

Bowker, K.A., 2007, The Floyd/Neil Shale: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 17.

Bowker, K.A., 2007, Barnett Shale gas production, Fort Worth Basin: Issues and discussion: AAPG Bulletin, v. 91, p. 523-533.

Bowker, K.A., 2008, Floyd Shale: still in R&D mode: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 18-19.

Bowker, K.A., and J.D. Reed, 2012, Clues to the Utica/Point Pleasant: Oil and Gas Investor, v. 32, no. 9, p. 75-76.

Boyce, M.L., and T.R. Carr, 2009, Lithostratigraphy and petrophysics of the Devonian Marcellus interval in West Virginia and southwestern Pennsylvania, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 254-281.

Boyd, D., 2009, Up-and-coming Marcellus driving upstream activity in Appalachian Basin: American Oil & Gas Reporter, v. 52, no. 11, p. 116-129.

Boyd, D., 2010, Cana Woodford Shale, stacked-pay Granite Wash spark Mid-Continent activity: American Oil & Gas Reporter, v. 53, no. 11, p. 42-61.

Boyd, D., 2011, New drill bit designs maximize performance in horizontal shale wells: American Oil & Gas Reporter, v. 54, no. 4, p. 140-149.

Boyd, D., 2011, Independents driving Marcellus activity: American Oil & Gas Reporter, v. 54, no. 8, p. 180-191.

Boyd, D., 2011, Infrastructure grows with shale boom: American Oil & Gas Reporter, v. 54, no. 11, p. 128-139.

Boyd, D., 2013, Regulatory uncertainty threat to Marcellus: American Oil & Gas Reporter, v. 56, no. 1, p. 172-177.

Brady, J., J. Daal, K. Marsh, T. Stokes, P. Vajjha, R. Werline, and C. Williams, 2017, Iimpact of re-fracturing techniques on reserves: A Barnett Shale example: Unconventional Resources Technology Conference, URTeC 2668825, 8 p. <http://archives.datapages.com/data/urtec/2017/2668825.html>

Brantley, S.L., D. Yoxtheimer, S. Arjmand, P. Grieve, R. Vidic, J. Pollak, G.T. Llewellyn, J. Abad, and C. Simon, 2014, Water resource impacts during unconventional shale gas development: The Pennsylvania experience: International Journal of Coal Geology, v. 126, p. 140-156.

Braziel, E.R., 2008, Stranded U.S. shale gas: Oil and Gas Investor, v. 28, no. 9, p. 71-73.

Braziel, E.R., 2011, Infrastructure projects connect Marcellus Shale to ethane, NGL markets: American Oil & Gas Reporter, v. 54, no. 3, p. 108-115.

Breyer, J.A., ed., 2012, Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, 451 p. (book and CD-ROM)

Breyer, J.A., P.J. Bunting, R.M. Monroe, and M.B. Steed, 2012, Lithologic and stratigraphic variation in a continuous shale-gas reservoir: The Barnett Shale (Mississippian), Fort Worth Basin, Texas, in J.A. Breyer, ed., Shale reservoirs: Giant resources for the 21st century: AAPG Memoir 97, p. 368-381.

Breyer, J.A., and D.M. Jarvie, 2019, Late Paleozoic subsidence and burial history of the Fort Worth Basin: discussion: AAPG Bulletin, v. 103, p. 1013.

Bridger, T., 2012, 3-D reservoir modeling key in shales: American Oil & Gas Reporter, v. 55, no. 2, p. 67-72.

Bridger, T., and J. Vonnet, 2012, Models address complexities of shale: American Oil & Gas Reporter, v. 55, no. 7, p. 138-143.

Briggs, D.G., 2010, Haynesville Shale is economic boon: American Oil & Gas Reporter, v. 53, no. 2, p. 60-61.

Brittenham, M.D., 2013, Geologic analysis of the Upper Jurassic Haynesville Shale in east Texas and west Louisiana: discussion: AAPG Bulletin, v. 97, p. 525-528.

Britton, T., and J. Roberts, 2006, West Texas shale gas play; challenges to commerciality: West Texas Geological Society, v. 06-117, p. 937-959.

Broadhead, R.F., R.C. Kepferle, and P.E. Potter, 1982, Stratigraphic and sedimentologic controls of gas in shale—Example from Upper Devonian of northern Ohio: AAPG Bulletin, v. 66, p. 10-27.

Broadhead, R.F., 1993, Petrography and reservoir geology of Upper Devonian shales, northern Ohio, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. H1-H15.

Broadhead, R.F., 2007, The Barnett Shale in southeastern New Mexico: distribution, thickness and source rock characterization, in C.E. Bowden, M.A. Raines, and G.D. Hinterlong, eds., Structure and stratigraphy of the Permian Basin—understanding the fundamentals of conventional and unconventional plays: West Texas Geological Society Publication 07-119, v. 2, p. 1-9.

Broadhead, R.F., and L. Gillard, 2007, The Barnett Shale in southeastern New Mexico: distribution, thickness and source rock characterization: Socorro, N.M., New Mexico Bureau of Geology and Mineral Resources, Open File Report 502, CD-ROM.

Broadhead, R., 2014, Overview of selected shale plays in New Mexico: AAPG Search and Discovery Article #10627, 41 p. <http://www.searchanddiscovery.com/pdfz/documents/2014/10627broadhead/ndx_broadhead.pdf.html>

Broadhead, R.F., 2017, Petroleum geology, in V.T. McLemore, S. Timmons, and M. Wilks, eds., Eneryg and mineral resources of New Mexico: New Mexico Bureau of Geology and Mineral Resources, Memoir 50A, 104 p.

Brooks, A., 2010, Gas shales: energy market solution or problem?: Hart Energy Publishing, E&P, v. 83, no. 2, p. 7-8.

Brooks, B., 2009, Nome: Haynesville tops shales today—and maybe any day: Oil and Gas Investor, v. 29, no. 8, p. 37.

Brooks, B., 2009, Will the shales keep long-term gas prices below $7?: Oil and Gas Investor, v. 29, no. 9, p. 34, 37.

Brown, A., 2011, Identification of source carbon for microbial methane in unconventional gas reservoirs: AAPG Bulletin, v. 95, p. 1321-1338.

Brown, D., 2006, Arkoma shale play expanding; Barnett may have Arkansas cousin: AAPG Explorer, v. 27, no. 2, p. 8, 10. (<http://www.aapg.org/explorer/2006/02feb/arkoma_basin.cfm>)

Brown, D., 2006, Shales require creative approaches: AAPG Explorer, v. 27, no. 11, p. 6,8,10. (<http://www.aapg.org/explorer/2006/11nov/shale_play.cfm>)

Brown, D., 2006, Fayetteville innovations paying off: AAPG Explorer, v. 27, no. 11, p. 6. (<http://www.aapg.org/explorer/2006/11nov/fayetteville.cfm>)

Brown, D., 2007, If it’s shale, it’s probably in play: AAPG Explorer, v. 28, no. 4, p. 10-16. <http://www.aapg.org/explorer/2007/04apr/beyond_barnett.cfm>

Brown, D., 2007, Subtle sweet spots: shales add to Wyoming portfolio: AAPG Explorer, v. 28, no. 5, p. 14-18. <http://www.aapg.org/explorer/2007/05may/wyoming.cfm>

Brown, D., 2008, Operators flocking to the play; big potential boosts the Woodford: AAPG Explorer, v. 29, no. 7, p. 12, 14, 16. <http://www.aapg.org/explorer/2008/07jul/woodford.cfm>

Brown, D., 2008, Shale driving new rig technology; room for more despite looming slowdown: AAPG Explorer, v. 29, no. 11, p. 8, 10. <http://www.aapg.org/explorer/2008/11nov/drilling.cfm>

Brown, D., 2009, Shale plays make BC feel cozy; extensive acreage has potential: AAPG Explorer, v. 30, no. 1, p. 10, 12. <http://www.aapg.org/explorer/2009/01jan/bc.cfm>

Brown, D., 2009, Studies shedding shale’s secrets; getting to the nitty of Barnett’s gritty: AAPG Explorer, v. 30, no. 3, p. 24, 26. <http://www.aapg.org/explorer/2009/03mar/shale.cfm>

Brown, D., 2009, New plays look to boost Arkoma: AAPG Explorer, v. 30, no. 12, p. 12,14. <http://www.aapg.org/explorer/2009/12dec/arkoma1209.cfm>

Brown, D., 2010, A number of implications; yes, Virginia, there is induced seismicity: AAPG Explorer, v. 31, no. 10, p. 14, 16. <http://www.aapg.org/explorer/2010/10oct/seismicinduction1010.cfm>

Brown, D., 2011, What is the cost of shale gas play?; not everyone agrees: AAPG Explorer, v. 32, no. 4, p. 38, 40. <http://www.aapg.org/explorer/2011/04apr/shale0411.cfm>

Brown, D., 2012, The Monterey Shale: big deal, or big bust?: AAPG Explorer, v. 33, no. 11, p. 8, 10, 12. <http://www.aapg.org/explorer/2012/11nov/monterey1112.cfm>

Brown, D., 2012, Monterey development possible—eventually: AAPG Explorer, v. 33, no. 11, p. 12. <http://www.aapg.org/explorer/2012/11nov/mont_dev1112.cfm>

Brown, D., 2013, Looking deeper into fracturing’s impacts; the ‘third wave’ has begun: AAPG Explorer, v. 34, no. 3, p. 26, 28. <http://www.aapg.org/explorer/2013/03mar/deepfrac0313.cfm>

Brown, D., 2014, Here’s the SCOOP, Oklahoma plays offer untapped potential: AAPG Explorer, v. 35, no. 3, p. 8, 10. <http://www.aapg.org/publications/news/explorer/details/articleid/8045/oklahoma-plays-offer-untapped-potential>

Brown, D., 2014, Global spotlight shines on emerging shale plays: AAPG Explorer, v. 35, no. 7, p. 20. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10742/global-spotlight-shines-on-emerging-shale-plays>

Brown, P.J., 1976, Energy from shale—a little used natural resource, in Natural gas from unconventional geologic sources: Washington, D.C., National Academy of Sciences, p. 86-99.

Brown, P.J., W.J. Haskett, and P. Leach, 2007, Decision-making for unconventional resources: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 22-25.

Brown, R., L. Honeyman, K. Fisher, A. Wisebaker, A.K. Sharma, and I.G. Brooks, 2013, New MWD, LWD services help drillers keep bit in formation’s sweet spot: American Oil & Gas Reporter, v. 56, no. 11, p. 108-115.

Brownfield, M.E., C.J. Schenk, T.R. Klett, J.K. Pitman, M.E. Tennyson, S.B. Gaswirth, P.A. Le, H.M. Leathers-Miller, T.J. Mercier, and T.M. Finn, 2016, Assessment of shale-gas resources of the Karoo Province, South Africa and Lesotho, Africa, 2016: U.S. Geological Survey Fact Sheet 2016-3038, 2 p. <https://pubs.er.usgs.gov/publication/fs20163038>

Browning, D.B., 2006, Investigating correlations between microseismic event data, seismic curvature, velocity anisotropy, and well production in the Barnett Shale, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis.

Browning, J., S.W. Tinker, S. Ikonnikova, G. Gülen, E. Potter, Q. Fu, S. Horvath, T. Patzek, F. Male, W. Fisher, F. Roberts, and K. Medlock, III, 2013, Barnett Shale model—1: Study develops decline analysis, geologic parameters for reserves, production forecast: Oil & Gas Journal, v. 111.8, p. 62-73.

Browning, J., S.W. Tinker, S. Ikonnikova, G. Gülen, E. Potter, Q. Fu, S. Horvath, T. Padzek, F. Male, W. Fisher, and F. Roberts, 2013, Barnett Shale model—2: Barnett study determines full-field reserves, production forecast: Oil & Gas Journal, v. 111.9, p. 88-95.

Browning, J., S.W. Tinker, S. Ikonnikova, G. Gülen, E. Potter, Q. Fu, K. Smye, S. Horvath, T. Patzek, F. Male, and F. Roberts, 2014, Study develops Fayetteville shale reserves, production forecast: Oil & Gas Journal, v. 112.1, p. 64-73.

Browning, J., S. Ikonnikova, F. Male, G. Gűlen, K. Smye, S. Horvath, C. Grote, T. Patzek, E. Potter, and S.W. Tinker, 2015, Study forecasts gradual Haynesville production recovery before final decline: Oil & Gas Journal, v. 113.12, p. 64-71.

Browning, S., and R. Jayakumar, 2017, Drilling laterals ‘toe up’ key to performance in Cana Woodford play: American Oil & Gas Reporter, v. 60, no. 1, p. 60-69.

Bruns, B., R. Littke, M. Gasparik, J.-D. van Wees, and S. Nelskamp, 2016, Thermal evolution and shale gas potential estimation of the Wealden and Posidonia Shale in NW-Germany and the Netherlands: a 3D basin modelling study: Basin Research, v. 28, p. 2-33.

Bryan, S., L. Cavett, and H. Dearing, 2007, Tailored fluids improve shale drilling efficiency: Hart Energy Publishing, E&P, v. 80, no. 1, p. 69-70.

Bu, H., Y. Ju, J. Tan, G. Wang, and X. Li., 2015, Fractal characteristics of pores in non-marine shales from the Huainan coalfield, eastern China: Journal of Natural Gas Science and Engineering, v. 24, p. 166-177.

Budai, J.M., A.M. Martini, L.M. Walter, and T.C.W. Ku, 2002, Fracture-fill calcite as a record of microbial methanogenesis and fluid migration: a case study from the Devonian Antrim Shale, Michigan Basin: Geofluids, v. 2, p. 163-183.

Bull, S., 2010, Marcellus shale gas play entry opportunities abound: Oil & Gas Journal, v. 108.4, p. 34-40.

Bull, S., 2010, Developing U.S. shale plays: Marcellus: Marcellus development sows the seeds of a new gas paradigm: World Oil, v. 231, no. 3, p. D-90.

Bullin, K.A., and P.E. Krouskop, 2009, Compositional variety complicates processing plants for US shale gas: Oil & Gas Journal, v. 107.10, p. 50-55.

Bunting, P.J., 2007, Petrographic analysis of the Barnett Shale in the Fort Worth Basin: Fort Worth, Texas Christian University, unpublished M.S. thesis, 101 p.

Bunting, P.J., and J.A. Breyer, 2012, Lithology of the Barnett Shale (Mississippian), southern Fort Worth Basin, Texas, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 322-343.

Burnett, D., 2018, Water management key in shale plays: American Oil & Gas Reporter, v. 61, no. 13, p. 63-65.

Burns, T., 2013, Hybrid system manages sampling data: American Oil & Gas Reporter, v. 56, no. 11, p. 104-107.

Busch, A., and A. Amann-Hildenbrand, 2013, Predicting capillarity of mudrocks: Marine and Petroleum Geology, v. 45, p. 208-223.

Busetti, S., W. Jiao, and Z. Reches, 2014, Geomechanics of hydraulic fracturing microseismicity: Part 1. Shear, hybrid, and tensile events: AAPG Bulletin, v. 98, p. 2439-2457.

Busetti, S., and Z. Reches, 2014, Geomechanics of hydraulic fracturing microseismicity: Part 2. Stress state determination: AAPG Bulletin, v. 98, p. 2459-2476.

Bush, T., B. Skelton, and D. Haas, 2015, Study finds Haynesville refracs lift production: Oil & Gas Journal, v. 113.11, p. 56-59.

Bustin, A.M.M., and R.M. Bustin, 2012, Importance of rock properties on the producibility of gas shales: International Journal of Coal Geology, v. 103, p. 132-147.

Bustin, A.M.M., and R.M. Bustin, 2016, Contribution of non-coal facies to the total gas-in-place in Mannville coal measures, central Alberta: International Journal of Coal Geology, v. 154-155, p. 69-81. (non-marine)

Bustin, R.M., 2004, Characterizing gas shales by laboratory adsorption and field desorption analyses (abstract): Denver, AAPG Rocky Mountain Section Meeting, Rocky Mountain Natural Gas 2004, Program and Abstracts, p. 92.

Bustin, R.M., 2005, Tax credit ignited development; gas shale tapped for big play: AAPG Explorer, v. 28, no. 2, p. 30.

Bustin, R.M., 2005, Comparative analyses of producing gas shales—rethinking methodologies of characterizing gas in place in gas shales, in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 39.

Bustin, R.M., ed., 2012, Shale gas and shale oil petrology and petrophysics: International Journal of Coal Geology, v. 103, p. 1-2.

Butcher, A.R., and H.J. Lemmens, 2011, Advanced SEM technology clarifies nanoscale properties of gas accumulations in shales: American Oil & Gas Reporter, v. 54, no. 7, p. 118-124.

Bybee, K., 2008, Wellbore strengthening in shale: Journal of Petroleum Technology, v. 60, no. 1, p. 71-75.

Bybee, K., 2009, Critical evaluation of additives used in shale slickwater fractures: Journal of Petroleum Technology, v. 61, no. 3, p. 54, 56, 91.

Bybee, K., 2009, Proper evaluation of shale-gas reservoirs leads to more effective hydraulic-fracture stimulation: Journal of Petroleum Technology, v. 61, no. 7, p. 59-61.

Bybee, K., 2009, Entrance pressure of oil-based mud into shale: Journal of Petroleum Technology, v. 61, no. 11, p. 63-64.

Byrne, D.J., P.H. Barry, M. Lawson, and C.J. Ballentine, 2018, Determining gas expulsion vs retention during hydrocarbon generation in the Eagle Ford Shale using noble gases: Geochimica et Cosmochimica Acta, v. 241, p. 240-254.

Cai, J., D. Lin, H. Singh, W. Wei, and S. Zhou, 2018, Shale gas transport model in 3D fractal pourous media with vaiable pore sizes: Marine and Petroleum Geology, v. 98, p. 437-447.

Caldwell, R., 2006, Are unconventional resources for real?: Hart Energy Publishing, E&P, v. 79, no. 1, p. 68-69.

Calio, E., and O. Slorer, 2014, Reform reveals Mexico’s potential: Oil and Gas Investor, v. 34, no. 10, p. 79-82.

Cameron, J., 2013, Refracturing horizontal shale wells with solid-steel expandable liners: World Oil, v. 234, no. 8, p. 39-52.

Cameron, J.R., B.S. Cooper, and R.T. Gusevik, 2013, Expandables prove value in Marcellus: American Oil & Gas Reporter, v. 56, no. 9, p. 128-134. (expandable solid-steel liners)

Camp, E.R., 2012, Casing gets early blame in fracturing studies: AAPG Explorer, v. 33, no. 1, p. 28, 31. <http://www.aapg.org/explorer/2012/01jan/washington0112.cfm>

Camp, W.K., 2006, A new classification for North American shale gas play evaluation (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 114.

Camp, W.K., E. Diaz, and B. Wawak, eds., 2013, Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, 260 p.

Camp, W.K., and B. Wawak, 2013, Enhancing SEM grayscale images through Pseudocolor Conversion: Examples from Eagle Ford, Haynesville, and Marcellus shales, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 15-26.

Camp, W.K., K.L. Milliken, K. Taylor, N. Fishman, P.C. Hackley, and J.H.S. Macquaker, eds., 2019, Mudstone diagenesis: Research perspectives for shale hydrocarbon reservoirs, seals, and source rocks: AAPG Memoir 120, 260 p.

Camp, W.K., 2019, Diagenetic evolution of organic matter cements: Implications for unconventional shale reservoir quality prediction, in W.K. Camp, K.L. Milliken, K. Taylor, N. Fishman, P.C. Hackley, and J.H.S. Macquaker, eds., Mudstone diagenesis: Research perspectives for shale hydrocarbon reservoirs, seals, and source rocks: AAPG Memoir 120, p. 209-224.

Campbell, B., 2008, Slower start doesn’t dim interest in New Albany: American Oil & Gas Reporter, v. 51, no. 9, p. 181-183.

Campbell, B., 2009, Chattanooga Shale becomes Tennessee success story: American Oil & Gas Reporter, v. 52, no. 6, p. 150-153.

Campbell, B., 2010, Marcellus Shale moves toward maturity: American Oil & Gas Reporter, v. 53, no. 3, p. 139-141.

Campbell, B., 2010, Organization, preparation crucial to success: American Oil & Gas Reporter,v. 53, no. 11, p. 146-148.

Cander, H., 2012, Sweet spots in shale gas and liquids plays: Prediction of fluid composition and reservoir pressure: AAPG Search and Discovery Article #40936, 29 p. <http://www.searchanddiscovery.com/pdfz/documents/2012/40936cander/ndx_cander.pdf.html>

Cander, H., 2012, What are unconventional resources? A simple definition using viscosity and permeability: AAPG Search and Discovery Article #80217, 3 p. <http://www.searchanddiscovery.com/pdfz/documents/2012/80217cander/ndx_cander.pdf.html>

Cander, H., 2013, Finding sweet spots in shale liquids and gas plays (with lessons from the Eagle Ford Shale): AAPG Search and Discovery Article #41093, 46 p. [www.searchanddiscovery.com/documents/2013/41093cander/ndx\_cander.pdf](http://www.searchanddiscovery.com/documents/2013/41093cander/ndx_cander.pdf)

Canter, L., S. Zhang, M. Sonnenfeld, C. Bugge, M. Guisinger, and K. Jones, 2016, Primary and secondary organic matter habit in unconventional reservoirs, in T. Olson, ed., Imaging unconventional reservoir pore systems: AAPG Memoir 112, p. 9-24.

Cao, C., Z. Lv, L. Li, and L. Du, 2016, Geochemical characteristics and implicatons of shale gas from the Longmaxi Formation, Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 131-138.

Cao, C., M. Zhang, Q. Tang, Y. Yang, Z. Lv, T. Zhang, C. Chen, H. Yang, and L. Li, 2018, Noble gas isotopic variations and geological implication of Longmaxi shale gas in Sichuan Basin, China: Marine and Petroleum Geology, v. 89, p. 38-46.

Cao, G., M. Lin, W. Jiang, H. Li, Z. Yi, and C. Wu, 2017, A 3D coupled model of organic matter and inorganic matrix for calculating the permeability of shale: Fuel, v. 204, p. 129-143.

Cao, P., J. Liu, and Y.-K. Leong, 2016, A fully coupled multiscale shale deformation-gas transport model for the evaluation of shale gas extraction: Fuel, v. 178, p. 103-117.

Cao, P., J. Liu, and Y.-K. Leong, 2016, Combined impact of flow regimes and effective stress on the evolution of shale apparent permeability: Journal of Unconventional Oil and Gas Resources, v. 14, p. 32-43.

Cao, P., J. Liu, and Y.-K. Leong, 2017, A multiscale-multiphase simulation model for the evaluation of shale gas recovery coupled the effect of water flowback: Fuel, v. 199, p. 191-205.

Cao, Q., W. Zhou, H. Deng, and W. Chen, 2015, Classification and controlling factors of organic pores in continental shale gas reservoirs based on laboratory experimental results: Journal of Natural Gas Science and Engineering, v. 27, p. 1381-1388.

Cao, T., Z. Song, H. Luo, Y. Zhou, and S. Wang, 2016, Pore system characteristics of the Permian transitional shale reservoir in the Lower Yangtze Region, China: Journal of Natural Gas Geoscience, v. 1, p. 383-395.

Capo, R.C., B.W. Stewart, E.L. Rowan, C.A. Kolesar Kohl, A.J. Wall, E.C. Chapman, R.W. Hammack, and K.T. Schroeder, 2014, The strontium isotopic evolution of Marcellus Formation produced waters, southwestern Pennsylvania: International Journal of Coal Geology, v. 126, p. 57-63.

Caramanica, F.P., and J. Lorenzen, 1994, Impact of reservoir properties and fractures on gas production, Antrim Shale, Michigan Basin: Des Plaines, Illinois, Gas Technology Institute, GRI-93/0330, 108 p.

Cardott, B.J., 2005, Overview of unconventional energy resources of Oklahoma, in B.J. Cardott, ed., Unconventional energy resources in the southern Midcontinent, 2004 symposium: Oklahoma Geological Survey Circular 110, p. 7-18.

Cardott, B.J., 2006, Hydrocarbon-source-rock data and gas-well completions, Woodford Shale and Caney Shale, Oklahoma (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 114.

Cardott, B.J., 2006, Potential gas shales in Oklahoma, U.S.A. (abstract): AAPG Annual Convention, Abstracts Volume, p. 18. (OGS Oklahoma Geology Notes, v. 66, no. 1, p. 44)

Cardott, B.J., 2006, Gas shales tricky to understand: AAPG Explorer, v. 27, no. 11, p. 49, 48. (<https://explorer.aapg.org/story/articleid/12477/gas-shales-tricky-to-understand?utm_medium=website&utm_source=explorer_issue_page>)

Cardott, B.J., 2008, Shales closing ‘conventional’ gap; understanding gains on ‘new’ reservoir: AAPG Explorer, v. 29, no. 11, p. 78, 75. (<https://explorer.aapg.org/story/articleid/10398/shales-closing-conventional-gap?utm_medium=website&utm_source=explorer_issue_page>)

Cardott, B.J., K.L. Avary, K.A. Bowker, T.C. Chidsey, Jr., W.B. Harrison, III, J.N. McCracken, C.D. Morgan, and D.E. Tabet, 2009, Gas shale, in P.W. Warwick, ed., Unconventional energy resources: 2007-2008 review: Natural Resources Research, v. 18, no. 2, p. 67-72.

Cardott, B.J., 2012, Thermal maturity of Woodford Shale gas and oil plays, Oklahoma, USA: International Journal of Coal Geology, v. 103, p. 109-119.

Cardott, B.J., 2013, Woodford Shale: From hydrocarbon source rock to reservoir: AAPG Search and Discovery Article #50817, 85 p. <http://www.searchanddiscovery.com/documents/2013/50817cardott/ndx_cardott.pdf>

Cardott, B.J., C.R. Landis, and M.E. Curtis, 2015, Post-oil solid bitumen network in the Woodford Shale, USA — A potential primary migration pathway: International Journal of Coal Geology, v. 139, p. 106-113.

Cardott, B.J., 2017, Oklahoma shale resource plays: Oklahoma Geological Survey, Oklahoma Geology Notes, v. 76, no. 2, p. 21-30.

Carey, J.W., Z. Lei, E. Rougier, H. Mori, and H. Viswanathan, 2015, Fracture-permeability behavior of shale: Journal of Unconventional Oil and Gas Resources, v. 11, p. 27-43. (Utica Shale)

Carr, T.R., T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., 2009, Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, 552 p.

Carter, Fortner and Béland-Otis; Ordovician and Devonian Black Shales and Shale Gas in Southwestern Ontario, Canada, 2009

<http://www.ogsrlibrary.com/downloads/Ontario_Shale_Gas_OPI_2009_Nov11.pdf>

Carter, K.M., J.A. Harper, K.W. Schmid, and J. Kostelnik, 2011, Unconventional natural gas resources in Pennsylvania: The backstory of the modern Marcellus Shale play: Environmental Geosciences Journal, v. 18, no. 4.

Carvajal-Ortiz, H., and T. Gentzis, 2015, Critical considerations when assessing hydrocarbon plays using Rock-Eval pyrolysis and organic petrology data: data quality revisited: International Journal of Coal Geology, v. 152, part A, p. 113-122.

Castañeda, J.C., L. Castro, and S. Craig, 2010, Sand plugs isolate frac stages in Barnett well: Hart Energy Publishing, E&P, v. 83, no. 10, p. 74-75.

Cavanaugh, T., and J. Walls, 2016, Multiresolution imaging of shales using electron and helium ion microscopy, in T. Olson, ed., Imaging unconventional reservoir pore systems: AAPG Memoir 112, p. 65-76.

Cavelan, A., M. Boussafir, O. Rozenbaum, and F. Laggoun-Défarge, 2019, Organic petrography and pore structure characterization of low-mature and gas-mature marine organic-rich mudstones: Insights into porosity controls in gas shale systems: Marine and Petroleum Geology, v. 103, p. 331-350.

Cavelan, A., M. Boussafir, C. Le Milbeau, O. Rozenbaum, and F. Laggoun-Défarge, 2019, Effect of organic matter composition on source rock porosity during confined anhydrous thermal maturation: Example of Kimmeridge-clay mudstones: International Journal of Coal Geology, v. 212, 103236.

CBM Solutions, 2005, Gas shale potential of Devonian strata, Northeastern British Columbia, Canada: British Columbia Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Special Paper 2005-1, 229 p. <http://www2.gov.bc.ca/gov/topic.page?id=A6684705252E4FB1A305496A0E93FD5A>

Chabalala, V.P., N. Wagner, N. Malumbazo, and C.F. Eble, 2020, Geochemistry and organic petrology of the Permian Whitehill Formation, Karoo Basin (RSA) and the Devonian/Carboniferous shale of the Appalachian Basin (USA): International Journal of Coal Geology, v. 232, 103612. (Ohio; Sunbury)

Chakrabarti, I., 2013, Microseismic monitoring explains complex fracture networks: Hart Energy Publishing, E&P, v. 86, no. 3, p. 76, 78.

Chalmers, G.R.L., and R.M. Bustin, 2007, The organic matter distribution and methane capacity of the Lower Cretaceous strata of northeastern British Columbia, Canada: International Journal of Coal Geology, v. 70, p. 223-239.

Chalmers, G.R.L., and R.M. Bustin, 2008, Lower Cretaceous gas shales in northeastern British Columbia, Part I: geological controls on methane sorption capacity: Bulletin of Canadian Petroleum Geology, v. 56, p. 1-21.

Chalmers, G.R.L., and R.M. Bustin, 2008, Lower Cretaceous gas shales in northeastern British Columbia, Part 2: evaluation of regional potential gas resources: Bulletin of Canadian Petroleum Geology, v. 56, p. 22-61.

Chalmers, G.R.L., and R.M. Bustin, 2012, Light volatile liquid and gas shale reservoir potential of the Cretaceous Shaftesbury Formation in northeastern British Columbia, Canada: AAPG Bulletin, v. 96, p. 1333-1367.

Chalmers, G.R.L., D.J.K. Ross, and R.M. Bustin, 2012, Geological controls on matrix permeability of Devonian gas shales in the Horn River and Liard basins, northeastern British Columbia, Canada: International Journal of Coal Geology, v. 103, p. 120-131.

Chalmers, G.R.L., and R.M. Bustin, 2012, Geological evaluation of Halfway–Doig–Montney hybrid gas shale–tight gas reservoir, northeastern British Columbia: Marine and Petroleum Geology, v. 38, p. 53-72.

Chalmers, G.R., R.M. Bustin, and I.M. Power, 2012, Characterization of gas shale pore systems by porosimetry, pycnometry, surface area, and field emission scanning electron microscopy/transmission electron microscopy image analyses: Examples from the Barnett, Woodford, Haynesville, Marcellus, and Doig units: AAPG Bulletin, v. 96, p. 1099-1119.

Chalmers, G.R.L., and R.M. Bustin, 2015, Porosity and pore size distribution of deeply-buried fine-grained rocks: Influence of diagenetic and metamorphic processes on shale reservoir quality and exploration: Journal of Unconventional Oil and Gas Resources, v. 12, p. 134-142.

Chamberlain, A.K., 2017, Great Basin elephant hunt: Hart Energy Publishing, E&P, v. 90, no. 3, p. 50-51. (Utah, Nevada)

Chandra, D., V. Vishal, J. Bahadur, and D. Sen, 2020, A novel approach to identify accessible and inaccessible pores in gas shales using combined low-pressure sorption and SAXS/SANS analysis: International Journal of Coal Geology, v. 228, 103556.

Chang, E., 2008, CNX: a CBM and shale gas play: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 20-22.

Chaouche, A., 2009, Unconventional seals for unconventional gas resources: examples from Barnett Shale and Cotton Valley tight sands of east Texas, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 234-253.

Chareonsuppanimit, P., S.A. Mohammad, R.L. Robinson, Jr., and K.A.M. Gasem, 2012, High-pressure adsorption of gases on shales: Measurements and modeling: International Journal of Coal Geology, v. 95, p. 34-46.

Chariag, B., 2007, Maximize reservoir contact: Hart Energy Publishing, E&P, v. 80, no. 1, p. 11-12.

Charles, H.H., and J.H. Page, 1929, Shale-gas industry of eastern Kansas: AAPG Bulletin, v. 13, p. 367-381.

Charneski, B., 2015, Water reuse: the emerging frontier for fracking?: Hart Energy Publishing, E&P, v. 88, no. 2, p. 52-56.

Charoensuppanimit, P., S.A. Mohammad, R.L. Robinson, Jr., and K.A.M. Gasem, 2015, Modeling the temperature dependence of supercritical gas adsorption on activated carbons, coals and shales: International Journal of Coal Geology, v. 138, p. 113-126.

Charpentier, R.R., W. de Witt, Jr., G.E. Claypool, L.D. Harris, R.F. Mast, J.D. Megeath, J.B. Roen, and J.W. Schmoker, 1993, Estimates of unconventional natural gas resources of the Devonian shales of the Appalachian Basin, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. N1-N20.

Charpentier, R.R., and T. Cook, 2010, Applying probabilistic well-performance parameters to assessments of shale-gas resources: U.S. Geological Survey Open-File Report 2010-1151, 18 p. <http://pubs.usgs.gov/of/2010/1151/pdf/OF10-1151.pdf>

Charpentier, R.R., and T.A. Cook, 2011, USGS methodology for assessing continuous petroleum resources: U.S. Geological Survey, Open-File report 2011-1167, 75 p. <http://pubs.usgs.gov/of/2011/1167/OF11-1167.pdf>

Chatellier, J.-Y., and D.M. Jarvie, eds., 2013, Critical assessment of shale resource plays: AAPG Memoir 103, 186 p.

Chatellier, J.-Y., K. Ferworn, N.L. Larsen, S. Ko, P. Flek, M. Molgat, and I. Anderson, 2013, Overpressure in shale gas: When geochemistry and reservoir engineering data meet and agree, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 45-69.

Chatellier, J.-Y., I. Anderson, C. Petr, H. Vinall, and D. Scarpino, 2015, 3-D view of fracture and reservoir pressures in shale leading to new approach and more reliable predictions: AAPG Search and Discovery Article #120182, 7 p. <http://www.searchanddiscovery.com/documents/2015/120182chatellier/ndx_chatellier.pdf>

Chatellier, J.-Y., T. Chow, and J. Wong, 2015, Multidisciplinary and integrated approach to better access open fracture systems and their impact on hydraulic fracturing: AAPG Search and Discovery Article #120183, 5 p. <http://www.searchanddiscovery.com/documents/2015/120183chatellier/ndx_chatellier.pdf>

Chen, C., 2016, Multiscale imaging, modeling, and principal component analysis of gas transport in shale reservoirs: Fuel, v. 182, p. 761-770.

Chen, C., W. Hu, J. Sun, W. Li, and Y. Song, 2019, CH4 adsorption and diffusion in shale pores from molecular simulation and a model for CH4 adsorption in shale matrix: International Journal of Heat and Mass Transfer, v. 141, p. 367-378.

Chen, D., Z. Pan, and Z. Ye, 2015, Dependence of gas shale fracture permeability on effective stress and reservoir pressure: Model match and insights: Fuel, v. 139, p. 383-392.

Chen, D., J. Zhang, X. Wang, B. Lan, Z. Li, and T. Liu, 2018, Characterisitcs of lacustrine shale reservoir and its effect on methane adsorption capacity in Fuxin Basin: Energy & Fuels, v. 32, p. 11105-11117.

Chen, F., C. Jiang, P. Shi, J. Chen, J. Dong, D. Feng, and H. Cheng, 2016, Geochemical characteristics of terrestrial shale gas and its production prediction significance in the Ordos Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 425-433.

Chen, F., S. Lu, X. Ding, H. Zhao, and Y. Ju, 2019, Total porosity measured for shale gas reservoir samples: A case from the Lower Silurian Longmaxi Formation in southeast Chongqing, China: Minerals, v. 9, no. 1, 12 p.

Chen, F., Q. Zheng, X. Ding, S. Lu, and H. Zhao, 2020, Pore size distributions contributed by OM, clay and other minerals in over-mature marine shale: A case study of the Longmaxi shale from southeast Chongqing, Chinia: Marine and Petroleum Geology, v. 122, 104679.

Chen, G., S. Lu, J. Zhang, Q. Xue, T. Han, H. Xue, S. Tian, J. Li, C. Xu, and M. Pervukhina, 2017, Keys to linking GCMC simulations and shale gas adsorption experiments: Fuel, v. 199, p. 14-21.

Chen, G., S. Lu, K. Liu, T. Han, C. Xu, Q. Xue, B. Shen, and Z. Guo, 2018, GCMC simulations on the adsorption mechanisms of CH4 and CO2 in K-illite and their implications for shale gas exploration and development: Fuel, v. 224, p. 521-528.

Chen, G., S. Lu, K. Liu, Q. Xue, T. Han, C. Xu, M. Tong, X. Pang, B. Ni, and S. Lu, 2019, Critical factors controlling shale gas adsorption mechanisms on different minerals investigated using GCMC simulations: Marine and Petroleum Geology, v. 100, p. 31-42.

Chen, G., S. Lu, K. Liu, Q. Xue, C. Xu, S. Tian, J. Li, Y. Zhang, M. Tong, X. Pang, B. Ni, S. Lu, and Q. Qi, 2019, Investigation of pore size effects on adsorption behavior of shale gas: Marine and Petroleum Geology, v. 109, p. 1-8.

Chen, J., and X. Xiao, 2014, Evolution of nanoporosity in organic-rich shales during thermal maturation: Fuel, v. 129, p. 173-181.

Chen, J., H. Gai, and Q. Xiao, 2021, Effects of composition and temperature on water sorption in overmature Wufeng-Longmaxi shales: International Journal of Coal Geology, v. 234, 103673.

Chen, L., Q. Kang, R. Pawar, Y.-L. He, and W.-Q. Tao, 2015, Pore-scale prediction of transport properties in reconstructed nanostructures of organic matter in shales: Fuel, v. 158, p. 650-658.

Chen, L., Q. Kang, Z. Dai, H.S. Viswanathan, and W. Tao, 2015, Permeability prediction of shale matrix reconstructed using the elementary building block model: Fuel, v. 160, p. 346-356.

Chen, L., Y. Lu, S. Jiang, J. Li, T. Guo, C. Luo, and F. Xing, 2015, Sequence stratigraphy and its application in marine shale gas exploration: A case study of the Lower Silurian Longmaxi Formation in the Jiaoshiba shale gas field and its adjacent area in southeast Sichuan Basin, SW China: Journal of Natural Gas Science and Engineering, v. 27, p. 410-423.

Chen, L., Z. Jiang, and K. Liu, 2018, A combination of N2 and CO2 adsorption to characterize nanopore structure of organic-rich Lower Silurian shale in the Upper Yangtze Platform, south China: Implications for shale gas sorption capacity: AAPG Search and Discovery Article #51472, 4 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/51472chen/ndx_chen.pdf.html>

Chen, L., Z. Jiang, S. Jiang, K. Liu, W. Yang, J. Tan, and F. Gao, 2019, Nanopore structure and fractal characteristics of lacustrine shale: Implications for shale gas storage and production potential: Nanomaterials, v. 9, no. 3.

Chen, L., Z. Jiang, Q. Liu, S. Jiang, K. Liu, J. Tan, and F. Gao, 2019, Mechanism of shale gas occurrence: Insights from comparative study on pore structures of marine and lacustrine shales: Marine and Petroleum Geology, v. 104, p. 200-216.

Chen, M., Y. Kang, T. Zhang, X. Li, K. Wu, and Z. Chen, 2018, Methane adsorption behavior on shale matrix at in-situ pressure and temperature conditions: Measurement and modeling: Fuel, v. 228, p. 39-49.

Chen, Q., J. Zhang, X. Tang, W. Li, and Z. Li, 2016, Relationship between pore type and pore size of marine shale: An example from the Sinian-Cambrian formation, upper Yangtze region, south China: International Journal of Coal Geology, v. 158, p. 13-28.

Chen, Q., Y. Kang, L. You, P. Yang, X. Zhang, and Q. Cheng, 2017, Change in composition and pore structure of Longmaxi black shale during oxidative dissolution: International Journal of Coal Geology, v. 172, p. 95-111.

Chen, R., S. Sharma, T. Bank, D. Soeder, and H. Eastman, 2015, Comparison of isotopic and geochemical characteristics of sediments fro a gas- and liquids-prone wells in Marcellus Shale from Appalachian Basin, West Virginia: Applied Geochemistry, v. 60, p. 59-71.

Chen, R., and S. Sharma, 2017, Linking the Acadian Orogeny with organic-rich black shale deposition: Evidence from the Marcellus Shale: Marine and Petroleum Geology, v. 79, p. 149-158.

Chen, S., Y. Zhu, H. Wang, W. Wei, and J. Fang, 2011, Shale gas reservoir characterization: a typical case in the southern Sichuan Basin of China: Energy, v. 36, p. 6609-6616.

Chen, S., Y. Zhu, Y. Qin, H. Wang, H. Liu, and J. Fang, 2014, Reservoir evaluation of the Lower Silurian Longmaxi Formation shale gas in the southern Sichuan Basin of China: Marine and Petroleum Geology, v. 57, p. 619-630.

Chen, S., Y. Han, C. Fu, H. Zhang, Y. Zhu, and Z. Zuo, 2016, Micro and nano-size pores of clay minerals in shale reservoirs: Implication for the accumulation of shale gas: Sedimentary Geology, v. 342, p. 180-190.

Chen, S., Z. Zuo, T.A. Moore, Y. Han, and C. Uwamahoro, 2018, Nanoscale pore changes in a marine shale: A case study using pyrolysis experiments and nitrogen adsorption: Energy & Fuels, v. 32, p. 9020-9032.

Chen, T., X.-T. Feng, and Z. Pan, 2015, Experimental study of swelling of organic rich shale in methane: International Journal of Coal Geology, v. 150-151, p. 64-73.

Chen, Y., L. Wei, M. Mastalerz, and A. Schimmelmann, 2015, The effect of analytical particle size on gas adsorption porosimetry of shale: International Journal of Coal Geology, v. 138, p. 103-112.

Chen, Y., L. He, H. Zhao, and J. Li, 2018, Energy-environmental implications of shale gas extraction with considering a stochastic decentralized structure: Fuel, v. 230, p. 226-243.

Chen, Z., D. Lavoie, and M. Malo, 2014, Geological characteristics and petroleum resource assessment of Utica Shale, Quebec, Canada: Geological Survey of Canada, Open-File 7606, 43 p.

Chen, Z., and C. Jiang, 2016, A revised method for organic porosity estimation in shale reservoirs using Rock-Eval data: Example from Duvernay Formation in the Western Canada Sedimentary Basin: AAPG Bulletin, v. 100, p. 405-422.

Chen, Z., C. Jiang, D. Lavoie, and J. Reyes, 2016, Model-assisted Rock-Eval data interpretation for source rock evaluation: Examples from producing and potential shale gas resource plays: International Journal of Coal Geology, v. 165, p. 290-302.

Chen, Z., D. Lavoie, M. Malo, C. Jiang, H. Sanei, and O.H. Ardakani, 2017, A dual-porosity model for evaluating petroleum resource potential in unconventional tight-shale plays with application to Utica Shale, Quebec (Canada): Marine and Petroleum Geology, v. 80, p. 333-348.

Chen, Z., X. Liu, Q. Guo, C. Jiang, and A. Mort, 2017, Inversion of source rock hydrocarbon generation kinetics from Rock-Eval data: Fuel, v. 194, p. 91-101. (Duvernay Shale)

Chen, Z., Y. Song, Z. Jiang, S. Liu, Z. Li, D. Shi, W. Yang, Y. Yang, J. Song, F. Gao, K. Zhang, and X. Guo, 2019, Identification of organic matter components and organic pore characteristics of marine shale: A case study of Wufeng-Longmaxi shale in southern Sichuan Basin, China: Marine and Petroleum Geology, v. 109, p. 56-69.

Chen, Z., L. Chen, G. Wang, C. Zou, S. Jiang, Z. Si, and W. Gao, 2020, Applying isotopic geochemical proxy for gas content prediction of Longmaxi shale in the Sichuan Basin, China: Marine and Petroleum Geology, v. 116, 104329.

Cheng, B., J. Xu, Q. Deng, Z. Liao, Y. Wang, O.L. Faboya, S. Li, J. Liu, and P. Peng, 2020, Methane cracking within shale rocks: A new explanation for carbon isotope reversal of shale gas: Marine and Petroleum Geology, v. 121, 104591.

Chermak, J.A., and M.E. Schreiber, 2014, Mineralogy and trace element geochemistry of gas shales in the United States: Environmental implications: International Journal of Coal Geology, v. 126, p. 32-44.

Chew, K., 2010, The shale frenzy comes to Europe: Hart Energy Publishing, E&P, v. 83, no. 3, p. 35-39.

Chew, K., 2010, Europe’s shale frenzy: Oil and Gas Investor, v. 30, no. 4, p. 59-61.

Chidsey, T.C., Jr., 2011, Utah shales may contain the “right stuff”: natural gas: Utah Geological Survey Survey Notes, v. 43, no. 2, p. 3-5. <http://geology.utah.gov/surveynotes/archives/snt43-2.pdf>

Chidsey, T.C., Jr., 2014, UGS set to publish major study on potential Paleozoic shale-gas resources: Utah Geological Survey Survey Notes, v. 46, no. 2, p. 8-9. <http://geology.utah.gov/surveynotes/snt46-2.pdf>

Chidsey, T.C., Jr., ed., 2016, Paleozoic shale-gas resources of the Colorado Plateau and eastern Great Basin, Utah: multiple frontier exploration opportunities: Utah Geological Survey, Bulletin 136, 241 p.

Chirinos, X.E.R., 2010, Hydraulically-induced microseismic fracture characterization from surface seismic attributes and seismic inversion: a north Texas Barnett Shale case study: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 67 p.

Chopra, S., and R.K. Sharma, 2015, Determining brittleness from seismic data: AAPG Explorer, v. 36, no. 10, p. 40-44. <http://www.aapg.org/publications/news/explorer/column/articleid/23025/determining-brittleness-from-seismic-data>

Chopra, S., and R.K. Sharma, 2017, Misconceptions about brittleness, and the talk about fracture toughness: AAPG Explorer, v. 38, no. 8, p. 20-21. <http://www.aapg.org/publications/news/explorer/column/Articleid/41397/misconceptions-about-brittleness-and-the-talk-about-fracture-toughness>

Chukwuma, K., E.M. Bordy, and A. Coetzer, 2018, Evolution of porosity and pore geometry in the Permian Whitehill Formation of South Africa — A FE-SEM image analysis study: Marine and Petroleum Geology, v. 91, p. 262-278.

Cicek, M., D. Devegowda, F. Civan, and R.F. Sigal, 2014, Unconventional reservoir characterization with upscaled permeability using SEM: AAPG Search and Discovery Article #41454, 9 slides.

Cicero, A.D., and I. Steinhoff, 2013, Sequence stratigraphy and depositional environments of the Haynesville and Bossier shales, east Texas and north Louisiana, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 25-46.

Ciezobka, J., and I. Salehi, 2014, Natural fractures critical in Marcellus: American Oil & Gas Reporter, v. 57, no. 6, p. 99-105.

Ciezobka, J., D. Maity, and I. Salehi, 2016, Variable-rate frac boosts production: American Oil & Gas Reporter, v. 59, no. 8, p. 62-67.

Ciferno, J., 2014, Meeting the challenges of shale gas development: Hart Energy Publishing, E&P, v. 87, no. 11, p. 29.

Cipolla, C.L., 2009, Modeling production and evaluating fracture performance in unconventional gas reservoirs: Journal of Petroleum Technology, v. 61, no. 9, p. 84-90.

Clark, I.D., D. Ilin, R.E. Jackson, M. Jensen, L. Kennell, H. Mohammadzadeh, A. Poulain, Y.P. Xing, and K.G. Raven, 2015, Paleozoic-aged microbial methane in an Ordovician shale and carbonate aquiclude of the Michigan Basin, southwestern Ontario: Organic Geochemistry, v. 83-84, p. 118-126.

Clark, R., 2013, Some downs, but a lot that’s up in Canada: AAPG Explorer, v. 34, no. 3, p. 50-51. <http://www.aapg.org/explorer/2013/03mar/regsec0313.cfm>

Clarke, R., 2007, Basin focus: Maverick Basin: Oil and Gas Investor, v. 27, no. 8, p. 87-90.

Clarkson, C.R., J.L. Jensen, P.K. Pedersen, and M. Freeman, 2012, Innovative methods for flow-unit and pore-structure analyses in a tight siltstone and shale gas reservoir: AAPG Bulletin, v. 96, p. 355-374.

Clarkson, C.R., N. Solano, R.M. Bustin, A.M.M. Bustin, G.R.L. Chalmers, L. He, Y.B. Melnichenko, A.P. Radliński, and T.P. Blach, 2013, Pore structure characterization of North American shale gas reservoirs using USANS/SANS, gas adsorption, and mercury intrusion: Fuel, v. 103, p. 606-616.

Clarkson, C.R., 2013, Production data analysis of unconventional gas wells: Review of theory and best practices: International Journal of Coal Geology, v. 109-110, p. 101-146.

Clarkson, C.R., 2013, Production data analysis of unconventional gas wells: Workflow: International Journal of Coal Geology, v. 109-110, p. 147-157.

Claugus, A., M. Dilli, B. Cherian, D. Mata, J. Sitchler, S. Alatrach, J. Neumiller, and M. Panjaitan, 2011, Integrated single-well modeling improves completion design in unconventional gas play: World Oil, v. 232, no. 7, p. 49-54. (Lewis)

Clouser, G., 2006, The booming Barnett Shale: Supplement to Oil & Gas Investor, January 2006, p. 8-12.

Clouser, G., 2008, Barnett barrels along: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 10-15.

Clouser, G., 2009, In the Maverick Basin, TXCO’s on the hunt: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 9-11.

Clouser, G., 2009, The Pierre Shale bonus: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 25-27.

Clouser, G., 2010, Eagle Ford buildout; South Texas: Midstream Business Report, A supplement to Oil and Gas Investor, p. 14-18.

Clouser, G., 2013, Fracing’s water-management boom: Oil and Gas Investor, v. 33, no. 5, p. 79-83.

Clouser, G., 2014, Lawyers, shales and money: Oil and Gas Investor, v. 34, no. 3, p. 64-69.

Cluff, R.M., M.L. Reinbold, and J.A. Lineback, 1981, The New Albany Shale Group of Illinois: Illinois State Geological Survey, Circular 518, 83 p. <http://www.isgs.uiuc.edu/sections/oil-gas/Circulars/Cir518_The_New_Albany_Shale_Group_of_Illinois.pdf>

Cluff, R.M., and D.R. Dickerson, 1982, Natural gas potential of the New Albany Shale Group (Devonian-Mississippian) in southeastern Illinois: Society of Petroleum Engineers Journal, SPE DOE Paper 8924, p. 21-28. (<http://www.isgs.uiuc.edu/sections/oil-gas/pubs.shtml#NewAlbany>)

Cluff, R.M., 1993, Source rocks and hydrocarbon generation in the New Albany Shale (Devonian-Mississippian) of the Illinois Basin—A review, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. I1-I15.

Cluff, R.M., 2006, Barnett Shale-Woodford Shale play of the Delaware Basin; is it another giant shale gas field in Texas?: West Texas Geological Society, v. 06-117, p. 28-29.

Coburn, T.C., P.A. Freeman, and E.D. Attanasi, 2012, Empirical methods for detecting regional trends and other spatial expressions in Antrim Shale gas productivity, with implications for improving resource projections using local nonparametric estimation techniques: Natural Resources Research, v. 21, p. 1-21.

Cody, P., 2013, Shale vs. big exploration: Hart Energy Publishing, E&P, v. 86, no. 1, p. 14-16. (risk)

Cody, P., 2013, Shale vs. big exploration: Oil and Gas Investor, v. 33, no. 2, p. 83-86.

Cohen, D.M., 2011, Haynesville leads the herd in shale gas production: World Oil, v. 232, no. 10, p. 66-78.

Cole, L., 2007, Each shale play has somewhat unique characteristics: American Oil & Gas Reporter, v. 50, no. 8, p. 31.

Cole, L., 2008, Operators moving toward exploitation phase in Marcellus Shale: American Oil & Gas Reporter, v. 51, no. 2, p. 41.

Cole, L., 2008, Public data helping to stimulate shale plays: American Oil & Gas Reporter, v. 51, no. 13, p. 29.

Cole, L., 2010, Resource plays help fuel optimism for natural gas: American Oil & Gas Reporter, v. 53, no. 1, p. 23. (Woodford Shale)

Cole, L., 2010, Right technology is the key to producing natural gas shales: American Oil & Gas Reporter, v. 53, no. 4, p. 37.

Cole, L., 2010, Being flexible in applying technology key for shales: American Oil & Gas Reporter, v. 53, no. 5, p. 29.

Cole, L., 2010, Interest in unconventional continues: American Oil & Gas Reporter, v. 53, no. 7, p. 27.

Coleman, J.L., R.C. Milici, T.A. Cook, R.R. Charpentier, M. Kirshbaum, T.R. Klett, R.M. Pollastro, and C.J. Schenk, 2011, Assessment of undiscovered oil and gas resources of the Devonian Marcellus Shale of the Appalachian Basin province, 2011: U.S. Geological Survey, Fact Sheet 2011-3092, 2 p. <http://pubs.usgs.gov/fs/2011/3092/pdf/fs2011-3092.pdf>

Colosimo, F., R. Thomas, J.R. Lloyd, K.G. Taylor, C. Boothman, A.D. Smith, R. Lord, and R.M. Kalin, 2016, Biogenic methane in shale gas and coal bed methane: A review of current knowledge and gaps: International Journal of Coal Geology, v. 165, p. 106-120.

Colwell, C., J. Crenshaw, and B. Bland, 2011, Haynesville drilling challenges addressed through MPD: World Oil, v. 232, no. 10, p. 47-54.

Comer, J.B., T. Hamilton-Smith, and W.T. Frankie, 1994, Source rock potential, in N.R. Hasenmueller and J.B. Comer, eds., Gas potential of the New Albany Shale (Devonian and Mississippian) in the Illinois Basin: Illinois Basin Consortium, Gas Research Institute 92-0391/Illinois Basin Studies 2, p. 47-54.

Comer, J.B., N.R. Hasenmueller, M.D. Mastalerz, J.A. Rupp, N.R. Shaffer, and C.W. Zuppann, 2006, The New Albany Shale gas play in southern Indiana (abstract): 2006 AAPG Eastern Section meeting, Program with Abstracts, p. 17. <https://scholarworks.iu.edu/dspace/handle/2022/712>

Comer, J.B., 2008, Reservoir characteristics and production potential of the Woodford Shale: World Oil, v. 229, no. 8, p. 83-89. <http://petesplace-peter.blogspot.com/2008/08/woodford-shale-major-new-unconventional.html>

Comet, P., C. Stringer, C. Scheibe, A. Maende, and E. Boice, 2015, Using XRF, SEM, and pyrolysis for an economic appraisal of the Marcellus Formation of western Virginia for hydraulic fracturing purposes: AAPG Search and Discovery Article #41629, 7 p. and poster. <http://www.searchanddiscovery.com/pdfz/documents/2015/41629comet/ndx_comet.pdf.html>

Connor, J.A., L.J. Molofsky, S.K. Farhat, A.S. Wylie, and T. Wagner, 2012, Methane in water wells unrelated to hydraulic fracturing: Hart Energy Publishing, E&P, v. 85, no. 4, p. 112.

Considine, T., R. Watson, R. Entler, and J. Sparks, 2009, An emerging giant: prospects and economic impacts of developing the Marcellus Shale natural gas play: Pennsylvania State University, 34 p. <http://www.energyindepth.org/wp-content/uploads/2009/03/psu_economic-impacts-of-developing-marcellus1.pdf>

Conway, G.E., and K. Perkins, 2011, Processing key to success in shales: American Oil & Gas Reporter, v. 54, no. 3, p. 117-121.

Cook, T., and R.R. Charpentier, 2010, Assembling probabilistic performance parameters of shale-gas wells: U.S. Geological Survey Open-File Report 2010-1138, 17 p. <http://pubs.usgs.gov/of/2010/1138/pdf/OF10-1138.pdf>

Cookson, C., 2006, Interest in gas shales brings new drilling parameters: American Oil & Gas Reporter, v. 49, no. 8, p. 139-141.

Cookson, C., 2010, Technologies enable frac water reuse: American Oil & Gas Reporter, v. 53, no. 3, p. 106-113.

Cookson, C., 2010, Shales spur mills to expand, invent: American Oil & Gas Reporter, v. 53, no. 9, p. 77-82.

Cookson, C., 2011, ‘High-Spec’ land rigs, drilling equipment advances proving key in shale plays: American Oil & Gas Reporter, v. 54, no. 4, p. 96-108.

Cookson, C., 2012, Marcellus bustles despite low prices: American Oil & Gas Reporter, v. 55, no. 8, p. 182-188.

Cookson, C., 2012, Promising early results accelerate Utica activity: American Oil & Gas Reporter, v. 55, no. 11, p. 110-121.

Cookson, C., 2013, Horizontal drilling accelerates in Permian Basin: American Oil & Gas Reporter, v. 56, no. 6, p. 92-101.

Cookson, C., 2014, New drilling fluids meet shale needs: American Oil & Gas Reporter, v. 57, no. 13, p. 71-75.

Cookson, C., 2017, Innovations streamline completions: American Oil & Gas Reporter, v. 60, no. 1, p. 71-73.

Cordes, M., 2017, An unconventional shift, in Hydraulic fracturing techbook: Houston, Hart Energy Publishing, p. 40-46.

Correll, Jr., C.C., 2014, Fracking in the Golden State: Hart Energy Publishing, E&P, v. 87, no. 7, p. 56-57. (California; Monterey Shale)

Cosenza, P., D. Prêt, A.-L. Fauchille, and S. Hedan, 2019, Representative elementary area of shale at the mesoscopic scale: International Journal of Coal Geology, v. 216, 103316.

Costin, G., A.E. Gőtz, and K. Ruckwied, 2019, Sedimentary organic matter characterization of the Whitehill shales (Karoo Basin, South Africa): An integrated quantitative approach using FE-EPMA and LA-ICP-MS: Review of Palaeobotany and Palynology, v. 268, p. 29-42.

Coulter, G.R., E.G. Benton, and C.L. Thomson, 2005, Frac sand volume key in Barnett Shale: American Oil & Gas Reporter, v. 48, no. 9, p. 70-79.

Coulter, G.R., B.C. Gross, E.G. Benton, and C.L. Thomson, 2006, Study demonstrates value of ‘hybrid’ frac design in Barnett Shale wells: American Oil & Gas Reporter, v. 49, no. 13, p. 60-68.

Craig, H., J. Valecillos, M. Arnone, and R. Callison, 2016, MPD emerging as preferred drilling method in Utica Shale: Hart Energy Publishing, E&P, v. 89, no. 11, p. 32, 34, 37.

Cramer, D., 2008, Methods key in unconventional plays: American Oil & Gas Reporter, v. 51, no. 6, p. 89-96.

Cramer, D., 2008, Stimulation key in unconventional plays: American Oil & Gas Reporter, v. 51, no. 7, p. 101-107.

Crenshaw, J., F. Gumus, and S.A. Cenberlitas, 2010, Pressure, flow control bring new drilling efficiency to Haynesville: Hart Energy Publishing, E&P, v. 83, no. 10, p. 63-67.

Crenshaw, J., 2012, MPD addresses Haynesville challenges: American Oil & Gas Reporter, v. 55, no. 3, p. 79-84. [managed pressure drilling]

Cristancho-Albarracin, D., I.Y. Akkutlu, L.J. Criscenti, and Y. Wang, 2017, Shale gas storage in kerogen nanopores with surface heterogeneities: Applied Geochemistry, v. 84, p. 1-10.

Crockett, J., and D. Morse, 2010, The New Albany Shale in Illinois: emerging play or prolific source: Oil & Gas Journal, v. 108.33, p. 72-79.

Crouse, P.C., 2006, Fayetteville Shale draws a crowd: Hart Energy Publishing, E&P, v. 79, no. 1, p. 66-67. (<http://www.eandpnet.com/articles/features/4221.htm>)

Crump, B., J. Meredith, B. Williams, and S. Charpiot, 2013, Shale oil and a problem well-stated: Hart Energy Publishing, E&P, v. 86, no. 11, p. 8-9. (Woodford)

Cruthirds, M., 2014, International race to production steadily ramping up: World Oil, v. 235, no. 7, p. 116-122.

CSUG, 2004, CSUG shale gas overview: Canadian Society for Unconventional Gas Web Site, <http://www.csug.ca/>

Cui, A.X., and K. Glover, 2014, A practical recommendation for permeability measurement in tight-sand and shale reservoirs: AAPG Search and Discovery Article #41407, 25 p. <http://www.searchanddiscovery.com/documents/2014/41407cui/ndx_cui.pdf>

Cui, G., J. Liu, M. Wei, R. Shi, and D. Elsworth, 2018, Why shale permeability changes under variable effective stresses: New insights: Fuel, v. 213, p. 55-71.

Cui, G., Y. Zhao, J. Liu, M. Wei, and D. Elsworth, 2018, A Gaussian Decomposition Method and its applications to the prediction of shale gas production: Fuel, v. 224, p. 331-347.

Cumela, S., A. Byrnes, and M. Sonnenfeld, 2018, Investigation of the shale electrical resistivity reversal commonly observed at the wet- to dry-gas transition: Unconventional Resources Technology Conference, URTeC 2901788, 18 p.

Cummins, P., 2008, New plays driving equipment demand: American Oil & Gas Reporter, v. 51, no. 14, p. 131, 133.

Curiale, J.A., and J.B. Curtis, 2016, Organic geochemical applications to the exploration for source-rock reservoirs – A review: Journal of Unconventional Oil and Gas Resources, v. 13, p. 1-31.

Curtis, J.B., 2002, Fractured shale-gas systems: AAPG Bulletin, v. 86, p. 1921-1938.

Curtis, J.B., 2006, An overview of shale gas exploration and current U.S. plays (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 114, 116.

Curtis, M.E., R.J. Ambrose, C.H. Sondergeld, and C.S. Rai, 2010, Structural characterization of gas shales on the micro- and nano-scales: Society of Petroleum Engineers, SPE Paper 137693, 15 p.

Curtis, M.E., R.J. Ambrose, C.H. Sondergeld, and C.S. Rai, 2011, Investigation of the relationship between organic porosity and thermal maturity in the Marcellus Shale: Society of Petroleum Engineers, SPE Paper 144370-PP, 4 p.

Curtis, M.E., R.J. Ambrose, C.H. Sondergeld, and C.S. Rai, 2011, Transmission and scanning electron microscopy investigation of pore connectivity of gas shales on the nanoscale: Society of Petroleum Engineers, SPE Paper 144391, 10 p.

Curtis, M.E., C.H. Sondergeld, R.J. Ambrose, and C.S. Rai, 2012, Microstructural investigation of gas shales in two and three dimensions using nanometer-scale resolution imaging: AAPG Bulletin, v. 96, p. 665-677.

Curtis, M.E., B.J. Cardott, C.H. Sondergeld, and C.S. Rai, 2012, Development of organic porosity in the Woodford Shale with increasing thermal maturity: International Journal of Coal Geology, v. 103, p. 26-31.

Curtis, T., 2016, Unravelling the US shale productivity gains: University of Oxford, The Oxford Institute for Energy Studies, OIES Paper WPM 69, 19 p. [https://www.oxfordenergy.org/wpcms/wp-content/uploads/2016/11/Unravelling-the-US-Shale-Productivity-Gains-WPM-69.pdf](http://www.oxfordenergy.org/wpcms/wp-content/uploads/2016/11/Unravelling-the-US-Shale-Productivity-Gains-WPM-69.pdf)

Curtiss, D., 2014, Today’s shale boom: Nothing invisible about this story: AAPG Explorer, v. 35, no. 6, p. 54. <http://www.aapg.org/publications/news/explorer/column/articleid/10212/today%E2%80%99s-shale-boom-nothing-invisible-about-this-story>

Cusack, C., J. Beeson, D. Stoneburner, and G. Robertson, 2010, The discovery, reservoir attributes, and significance of the Hawkville Field and Eagle Ford Shale trend, Texas: Gulf Coast Association of Geological Societies Transactions, v. 60, p. 165-179.

Dahl, J., J. Spaid, B. McDaniel, B. Grieser, R. Dusterhoft, B. Johnson, and S. Siddiqui, 2014, Applied reservoir understanding accelerates shale asset success: World Oil, v. 235, no. 9, p. 87-98.

Dahl, J., P. Nguyen, R. Dusterhoft, J. Calvin, and S. Siddiqui, 2016, Enhancing production from unconventional reservoirs with micro-proppant: World Oil, v. 237, no. 3, p. 65-69.

Dai, C., H. Liu, Y. Wang, X. Li, and W. Wang, 2019, A simulation approach for shale gas development in China with embedded discrete fracture modeling: Marine and Petroleum Geology, v. 100, p. 519-529.

Dai, J., C. Zou, S. Liao, D. Dong, Y. Ni, J. Huang, W. Wu, D. Gong, S. Huang, and G. Hu, 2014, Geochemistry of the extremely high thermal maturity Longmaxi shale gas, southern Sichuan Basin: Organic Geochemistry, v. 74, p. 3-12.

Dai, J., C. Zou, D. Dong, Y. Ni, W. Wu, D. Gong, Y. Wang, S. Huang, J. Huang, C. Fang, and D. Liu, 2016, Geochemical characteristics of marine and terrestrial shale gas in China: Marine and Petroleum Geology, v. 76, p. 444-463.

Daigle, H., A. Johnson, J.P. Gips, and M. Sharma, 2014, Enhanced formation evaluation of shales using NMR Secular Relaxation: AAPG Search and Discovery Article #41411, 16 p. <http://www.searchanddiscovery.com/documents/2014/41411daigle/ndx_daigle.pdf>

Daigle, H., N. Hayman, E. Kelly, K. Milliken, and H. Jiang, 2017, Fracture capture of organic-hosted pores during shale deformation: An explanation for permeability and production enhancement?: AAPG Search and Discovery Article #41979, 27 p. <http://www.searchanddiscovery.com/pdfz/documents/2017/41979daigle/ndx_daigle.pdf.html>

Daneshy, A., 2011, Uneven distribution of proppants in perf clusters: World oil, v. 232, no. 4, p. 75-76.

Daneshy, A., 2011, Review of screen-out in horizontal well fracturing: World Oil, v. 232, no. 6, p. 67-69.

Daneshy, A., 2011, Ball-activated sliding-sleeve fracturing best practices: World Oil, v. 232, no. 8, p. 65-71.

Daneshy, A., 2011, Multistage fracturing using plug-and-perf systems: World Oil, v. 232, no. 10, p. 81-85.

Daneshy, A., 2011, Dual-injection frac systems in horizontal wells: World Oil, v. 232, no. 12, p. 55-57.

Daneshy, A., 2012, Provocative concepts in fracturing: World Oil, v. 233, no. 7, p. 67-70.

Daneshy, A., 2012, Diagnostic tools for hydraulic fracturing: World Oil, v. 233, no. 11, p. 98-100.

Daneshy, A., 2013, ‘Who done it’ in hydraulic fracturing: World Oil, v. 234, no. 6, p. 97-102.

Daneshy, A., 2013, Horizontal well fracturing: A state-of-the-art report: World Oil, v. 234, no. 7, p. S-147 to S-151.

Daneshy, A., 2013, Are we over-fracturing horizontal shale wells?: World Oil, v. 234, no. 10, p. 133-136.

Dang, W., J. Zhang, X. Tang, Q. Chen, S. Han, Z. Li, X. Du, X. Wei, M. Zhang, J. Liu, J. Peng, and Z. Huang, 2016, Shale gas potential of Lower Permian marine-continental transitional black shales in the Southern North China Basin, central China: Characterization of organic geochemistry: Journal of Natural Gas Science and Engineering, v. 28, p. 639-650.

Dang, W., S. Jiang, J. Zhang, F. Wang, J. Tao, X. Wei, X. Tang, C. Wang, and Q. Chen, 2019, Experimental and modeling study on the effect of shale composition and pressure on methane diffusivity: Energy & Fuels, v. 33, p. 714-726.

Daniel, J., 2010, Shale energy: Developing the Haynesville—A cooperative model for US shale gas development: World Oil, v. 231, no. 6.

Danquah, O., 2011, Unconventional gas resources come of age: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 172-176.

Danquah, O., 2011, Marcellus trismus?: Oil and Gas Investor, v. 31, no. 6, p. 19.

Danquah, O., 2011, Reaching full potential: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 86-90.

Dar, V.K., 2010, Emerging shale plays present opportunities across North America, spanning the Globe: American Oil & Gas Reporter, v. 53, no. 1, p. 40-49.

Dar, V.K., 2014, Unconventional resources drive technology innovations, array of business opportunities, tech trends 2014: American Oil & Gas Reporter, v. 57, no. 1, p. 94-101.

Darbonne, N., 2006, Breaking into the Barnett: Oil and Gas Investor, v. 26, no. 4, p. 48-60.

Darbonne, N., 2006, Chesapeake expanding stake in Texas’ Barnett, Woodford: Oil and Gas Investor, v. 26, no. 11, p. 18-19.

Darbonne, N., 2008, Pickering picks Marcellus among hottest U.S. plays: Oil and Gas Investor, v. 28, no. 3, p. 19-20.

Darbonne, N., 2008, Haynesville 101: Oil and Gas Investor, v. 28, no. 5, p. 85-89.

Darbonne, N., 2008, Major oil, meet shale: Oil and Gas Investor, v. 28, no. 8, p. 11.

Darbonne, N., 2008, Louisiana Haynesville-ride: Oil and Gas Investor, v. 28, no. 9, p. 11.

Darbonne, N., and S. Toon, 2008, Haynesville prices may top out at more than $50,000 per acre: Oil and Gas Investor, v. 28, no. 9, p. 25-27.

Darbonne, N., 2008, Haynesville squeeze-out: Oil and Gas Investor, v. 28, no. 10, p. 59-61.

Darbonne, N., 2008, How to look good naked: Major oils may now get U.S. shale-play entry on the cheap: Oil and Gas Investor, v. 28, no. 11.

Darbonne, N., 2009, Shale M&A: Vision 2009 Global Energy Outlook, supplement to Oil and Gas Investor, January 2009, p. 113-118.

Darbonne, N., 2009, Haynesville 101: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 4-8.

Darbonne, N., 2009, Haynesville squeeze-out: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 24-26.

Darbonne, N., 2009, Calyon analysts discuss Eagle Ford, Haynesville, Marcellus, more shales: Oil and Gas Investor, v. 29, no. 2, p. 124-126.

Darbonne, N., 2009, Unconventional gas rush: Oil and Gas Investor, v. 29, no. 5, p. 11.

Darbonne, N., 2009, The Marcellus files: Oil and Gas Investor, v. 29, no. 12, p. 11.

Darbonne, N., 2011, Will European unconventional gas be a game-changer?: Oil and Gas Investor, v. 31, no. 3, p. 39.

Darbonne, N., 2011, Eagle Ford: Act 2: Houston, Hart Energy Publishing, Eagle Ford Shale 2011 Playbook, p. 4-18.

Darbonne, N., 2011, Monetizing Marcellus: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 4-20.

Darbonne, N., 2012, Emerging plays: Oil and Gas Investor, v. 32, no. 1, p. 58-70.

Darbonne, N., 2012, The Utica: game on, in Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, p. 4-16.

Darbonne, N., 2012, A (Point) Pleasant surprise: Oil and Gas Investor, v. 32, no. 7, p. 104. (Utica-Point Pleasant)

Darbonne, N., 2012, The wet Cotton Valley: Oil and Gas Investor, v. 32, no. 9, p. 79-81.

Darbonne, N., 2013, Marcellus will be no. 1 gas field in two years: Oil and Gas Investor, v. 33, no. 1, p. 46-48.

Darbonne, N., 2014, The American shales: North Charleston, SC, CreateSpace Independent Publishing Platform, 364 p.

Darbonne, N., 2015, Beyond North America: ready, set, saturated — shale hits the road, in North American unconventional yearbook: Houston, Hart Energy Publishing, p. 168-176.

Darbonne, N., 2015, How to make lemonade: Hart Energy Publishing, E&P, v. 88, no. 2, p. 46-50. (hydraulic fracturing)

Darbonne, N., 2015, Midcontinent oil and the new swing producers: Oil and Gas Investor, v. 35, no. 4, p. 81-83. (Springer)

Darbonne, N., 2016, Gas mountain, in U.S. unconventional yearbook: Houston, Hart Energy Publishing, p. 8-21. (Utica, Marcellus)

Darbonne, N., 2016, Gas tiger: Oil and Gas Investor, v. 36, no. 11, p. 40-51. (Marcellus)

Darbonne, N., 2017, Analysts: SCOOP outperforms original Stack window: Oil and Gas Investor, v. 37, no. 1, p. 27, 29.

Darbonne, N., 2017, The Haynesville renaissance: Oil and Gas Investor, v. 37, no. 4.

Darbonne, N., 2017, Lower 48 exploration: Alpine high: Oil and Gas Investor, v. 30, no. 1, p. 70-74. (Delaware Basin Barnett and Woodford)

Das, S.K., 2011, India starts testing shale-gas plays: Oil & Gas Journal, v. 109.19, p. 90-93.

Da Silva Rodriguez, M.R., 2013, Production correlation to 3D seismic attributes in the Barnett Shale, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 109 p.

Davies, D.K., and R.K. Vessell, 2003, Gas production from shale, in E.D. Scott, A.H. Bouma, and W.R. Bryant, eds., Siltstones, mudstones and shales: depositional processes and characteristics: SEPM/GCAGS Joint Publication, p. 112-125.

Davies, R.J., S.A. Mathias, J. Moss, S. Hustoft, and L. Newport, 2012, Hydraulic fractures: How far can they go?: Marine and Petroleum Geology, v. 37, p. 1-6.

Davies, R.J., S. Almond, R.S. Ward, R.B. Jackson, C. Adams, F. Worrall, L.G. Herringshaw, J.G. Gluyas, and M.A. Whitehead, 2014, Oil and gas wells and their integrity: Implications for shale and unconventional resource exploitation: Marine and Petroleum Geology, v. 56, p. 239-254.

Davies, R.J., S. Almond, R.S. Ward, R.B. Jackson, C. Adams, F. Worrall, L.G. Herringshaw, J.G. Gluyas, and M.A. Whitehead, 2015, Reply: “Oil and gas wells and their integrity: Implications for shale and unconventional resource exploitation”: Marine and Petroleum Geology, v. 59, p. 674-675.

Davis, T.L., and J. Namson, 2014, Nevada’s Chainman shale shows exploration potential: Oil & Gas Journal, v. 112.6, p. 42-49.

Davudov, D., and R.G. Moghanloo, 2018, Impact of pore compressibility and connectivity loss on shale permeability: International Journal of Coal Geology, v. 187, p. 98-113.

Davudov, D., R.G. Moghanloo, and Y. Zhang, 2020, Interplay between pore connectivity and permeability in shale sample: International Journal of Coal Geology, v. 220, 103427.

Davy, J.A., 2011, Operators, analysts weigh in on unconventional resources: Hart Energy Publishing, E&P, v. 84, no. 6, p. 74-75.

Dayal, A., and D. Mani, 2017, Shale gas: Exploration and environmental and economic impacts: Elsevier, 192 p.

Deacon, R., 2009, Haynesville play exceeds expectations: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 86-88.

Deacon, R., 2009, The size of the prize: Houston, Hart Energy Publishing, Marcellus Playbook, p. 84-85.

Deacon, R., 2009, Future returns: Houston, Hart Energy Publishing, Barnett Playbook, p. 64-65.

Deacon, R., 2010, The eagle is soaring: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 60-62.

Deacon, R.J., 2011, Barnett provides future returns: Hart Energy Publishing, E&P, v. 84, no. 3, p. 71-75.

Decker, A.D., J.-M. Coates, and D.E. Wicks, 1992, Stratigraphy, gas occurrence, formation evaluation, and fracture characterization of the Antrim Shale, Michigan Basin: Chicago, Illinois, Gas Research Institute Report GRI-92/0258, 153 p.

Decker, C., 2004, Better characterization of unconventional gas reservoirs: GasTIPS, v. 10, no. 4, p. 10-13.

Deglint, H.J., A. Ghanizadeh, C. DeBuhr, C.R. Clarkson, and J.M. Wood, 2017, Comparison of micro- and macro-wettability measurements for unconventional reservoirs: The devil is in the detail” Unconventional Resources Technology Conference, URTeC 2690338, 9 p. (Montney)

Dehghanpour, H., M. Xu, and A. Habibi, 2015, Wettability of gas shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 341-459.

Dellapenna, T.M., 1991, Sedimentological, structural and organic geochemical controls on natural gas occurrence in the Antrim Formation in Otsego County, Michigan: Kalamazoo, MI, Western Michigan University, unpublished M.S. thesis, 147 p.

Dembicki, Jr., H., 2009, Three common source rock evaluation errors made by geologists during prospect or play appraisals: AAPG Bulletin, v. 93, p. 341-356.

Dembicki, Jr., H., 2013, Shale gas geochemistry mythbusting: AAPG Search and Discovery Article #80294, 23 p. <http://www.searchanddiscovery.com/documents/2013/80294dembicki/ndx_dembicki.pdf>

Dembicki, Jr., H. and J.D. Madren, 2014, Lessons learned from the Floyd shale play: Journal of Unconventional Oil and Gas Resources, v. 7, p. 1-10.

de Medeiros Costa, H.K., E.M. Santos, V. Emanoel, P.O. Marti, and A. Ingelson, 2016, EU unconventional resource development stalls: Oil & Gas Journal, v. 114.6, p. 44-49. (Europe)

DeMong, K., and K. Keene, 2010, Shale energy: developing the Horn River — Re-engineering surface equipment and processes to support continuous fracing: World Oil, v. 231, no. 10, p. D-115 to D-123.

Deng, H., X. Hu, H. Li, B. Luo, and W. Wang, 2016, Improved pore-structure characterization in shale formations with FESEM technique: Journal of Natural Gas Science and Engineering, v. 35, p. 309-319.

Deng, J., W. Zhu, and Q. Ma, 2014, A new seepage model for shale gas reservoir and productivity analysis of fractured well: Fuel, v. 124, p. 232-240.

Deng, J.C., 2011, An integrated paleomagnetic, geochemical, and diagenetic study of the Mississippian Barnett Shale, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 63 p.

Denney, D., 2008, Contact more Barnett Shale by integrating real-time-microseismic monitoring, petrophysics, and hydraulic-fracture design: Journal of Petroleum Technology, v. 60, no. 3, p. 57-60.

Denney, D., 2009, Evaluating implications of hydraulic-fracturing in shale-gas reservoirs: Journal of Petroleum Technology, v. 61, no. 8, p. 53-54.

Dennie, D.P., 2010, An integrated paleomagnetic and diagenetic investigation of the Barnett Shale and underlying Ellenburger Group carbonates, Fort Worth Basin, Texas: Norman, Oklahoma, University of Oklahoma, unpublished Ph.D. dissertation, 211 p.

De Ribet, B., 2013, Unconventionals require nontraditional workflows: Hart Energy Publishing, E&P, v. 86, no. 5, p. 20-23.

Dershowitz, B., and M. Cottrell, 2011, Understanding shale fractures leads to better production, lower cost: Hart Energy Publishing, E&P, v. 84, no. 8, p. 38-40.

Dershowitz, B., and T.W. Doe, 2011, Modeling complexities of natural fracturing key in gas shales: American Oil & Gas Reporter, v. 54, no. 8, p. 70-76.

De Silva, P.N.K., S.J.R. Simons, P. Stevens, and L.M. Philip, 2015, A comparison of North American shale plays with emerging non-marine shale plays in Australia: Marine and Petroleum Geology, v. 67, p. 16-29. (clay rich; lacustrine)

Deutsch, N., and P.R. Crump, 2014, The power struggle over the regulation of hydraulic fracturing: Hart Energy Publishing, E&P, v. 87, no. 3, p. 8, 10.

Dewers, T., J. Heath, and M. Sánchez, 2020, Shale: Subsurface science and engineering: American Geophysical Union, Geophysical Monograph 245.

Dewhurst, D.N., Y. Yang, and A.C. Aplin, 1999, Permeability and fluid flow in natural mudstones, in A.C. Aplin, A.J. Fleet, and J.H.S. Macquaker, eds., Muds and mudstones: Physical and fluid-flow properties: London, Geological Society, Special Publication 158, p. 23-43.

de Witt, W., Jr., 1976, Current investigation of Devonian shale by the U.S. Geological Survey, in Natural gas from unconventional geologic sources: Washington, D.C., National Academy of Sciences, p. 113-115.

de Witt, W., Jr., 1986, Devonian gas-bearing shales in the Appalachian basin, in C.W. Spencer and R.F. Mast, eds., Geology of tight gas reservoirs: AAPG Studies in Geology 24, p. 1-8.

de Witt, W., Jr., J.B. Roen, and L.G. Wallace, 1993, Stratigraphy of Devonian black shales and associated rocks in the Appalachian Basin, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. B1-B57.

Ding, W., D. Zhu, J. Cai, M. Gong, and F. Chen, 2013, Analysis of the developmental characteristics and major regulating factors of fractures in marine-continental transitional shale-gas reservoirs: A case study of the Carboniferous-Permian strata in the southeastern Ordos Bsain, central China: Marine and Petroleum Geology, v. 45, p. 121-133.

Dittrick, P., 2008, Longer legs, multilaterals under study in Arkoma Woodford Shale gas play: Oil & Gas Journal, v. 106.13, p. 40-44.

Dittrick, P., 2008, IPAA: Unconventional gas changing US supply picture: Oil & Gas Journal, v. 106.43, p. 32.

Dittrick, P., 2009, US gives gas extra attention as output grows from shales: Oil & Gas Journal, v. 107.1, p. 21-22.

Dittrick, P., 2009, New York releases Marcellus shale drilling proposal: Oil & Gas Journal, v. 107.38, p. 29-30.

Dittrick, P., 2011, Europe’s shale revolution: Oil & Gas Journal, v. 109.11, p. 14.

Dittrick, P., 2011, Industry upbeat Marcellus Shale holds great economic potential: Oil & Gas Journal, v. 109.15, p. 30-35.

Dittrick, P., 2011, Shale gas subcommittee says states regulate effectively: Oil & Gas Journal, v. 109.17a, p. 18-19.

Dittrick, P., 2011, Pennsylvania governor proposes Marcellus shale policy: Oil & Gas Journal, v. 109.17a, p. 19-20.

Dittrick, P., 2011, API: State regulations, industry standards ensure safe fracturing: Oil & Gas Journal, v. 109.17c, p. 22, 24.

Dittrick, P., 2011, Poland shale gas could change European supply mix: Oil & Gas Journal, v. 109.18, p. 36-40.

Dittrick, P., 2012, Canadian provinces follow US states in hydraulic fracing guidelines, rules: Oil & Gas Journal, v. 110.3, p. 36, 38.

Dittrick, P., 2012, Unconventional resource estimates subject to uncertainty, future costs: Oil & Gas Journal, v. 110.4, p. 36-40.

Dittrick, P., 2012, Europe, Africa, Asia governments assess shale development policies: Oil & Gas Journal, v. 110.7, p. 44-46.

Dittrick, P., 2013, Industry awaits permission to explore South Africa’s Karoo shale gas: Oil & Gas Journal, v. 111.1, p. 38-41.

Dittrick, P., 2013, WoodMac: Commercial viability of UK shale gas yet to be proved: Oil & Gas Journal, v. 111.1, p. 41.

Dittrick, P., 2013, Accenture: US shale gas operations offer lessons for other countries: Oil & Gas Journal, v. 111.1a, p. 17-18.

Dittrick, P., 2013, Shale gas best practices: Oil & Gas Journal, v. 111.2b, p. 16.

Dittrick, P., 2013, Montney, Duvernay will be key to Canada shale oil, gas growth: Oil & Gas Journal, v. 111.4, p. 34-36.

Dittrick, P., 2013, EIA-ARI issues update of world assessment of shale oil, shale gas: Oil & Gas Journal, v. 111.7, p. 46, 48.

Dittrick, P., 2018, Producers apply analytics to unconventional plays: Oil & Gas Journal, v. 116.7, p. 42-44.

Doelger, M.J., and J.A. Barlow, Jr., 1997, The Lewis Shale: an emerging gas play in the eastern Greater Green River Basin of Wyoming: GRI GasTIPS, v. 3, no. 3, p. 4-10.

Dohmen, T., J.J. Zhang, and J.-P. Blangy, 2015, ‘Stress shadowing’ effect key to optimizing spacing of multistage fracturing: American Oil & Gas Reporter, v. 58, no. 9, p. 70-79.

Dolan, M.P., D.K. Higley, and P.G. Lillis, eds., 2016, Hydrocarbon source rocks in unconventional plays, Rocky Mountain Region: The Rocky Mountain Association of Geologists, 420 p.

Donadio, M., and C. Swanson, 2010, Shale shock reverberates across US and beyond: Hart Energy Publishing, E&P, v. 83, no. 6, p. 29-30.

Donaldson, E.C., W.M. Alam, and N. Begum, 2012, Technology is key enabler of shale production while minimizing environmental impact: Fracturing Technology, special supplement to World Oil (v. 233, no. 3), p. 3-4.

Doner, Z., M. Kumral, I.H. Demirel, and Q. Hu, 2019, Geochemical characteristics of the Silurian shales from the central Taurides, southern Turkey: Organic matter accumulation, preservation and depositional environment modeling: Marine and Petroleum Geology, v. 102, p. 155-175.

Dong, D., S. Gao, J. Huang, Q. Guan, S. Wang, and Y. Wang, 2015, Discussion on the exploration & development prospect of shale gas in the Sichuan Basin: Natural Gas Industry B, v. 2, p. 9-23.

Dong, D., C. Zou, J. Dai, S. Huang, J. Zheng, J. Gong, Y. Wang, X. Li, Q. Guan, C. Zhang, J. Huang, S. Wang, D. Liu, and Z. Qiu, 2016, Suggestions on the development strategy of shale gas in China: Journal of Natural Gas Geoscience, v. 1, p. 413-423.

Dong, H., J. Sun, J. Zhu, Z. Lin, L. Cui, W. Yan, and Z. Xiong, 2019, Quantitative characterization and characteristic analysis of pore structure of shale-gas reservoir in the Sichuan Basin, China: Interpretation, v. 7, no. 4, p. SJ23-SJ32.

Dong, T., and N.B. Harris, 2013, Pore size distribution and morphology in the Horn River Shale, Middle and Upper Devonian, northeastern British Columbia, Canada, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 67-79.

Dong, T., N.B. Harris, K. Ayranci, C.E. Twemlow, and B.R. Nassichuk, 2015, Porosity characteristics of the Devonian Horn River shale, Canada: Insights from lithofacies classification and shale composition: International Journal of Coal Geology, v. 141-142, p. 74-90.

Dong, T., N.B. Harris, K. Ayranci, C.E. Twemlow, and B.R. Nassichuk, 2017, The impact of composition on pore throat size and permeability in high maturity shales: Middle and Upper Devonian Horn River Group, northeastern British Columbia, Canada: Marine and Petroleum Geology, v. 81, p. 220-236.

Dong, T., N.B. Harris, K. Ayranci, and S. Yang, 2017, The impact of rock composition on geomechanical properties of a shale formation: Middle and Upper Devonian Horn River Group shale, northeast British Columbia, Canada: AAPG Bulletin, v. 101, p. 177-204.

Dong, T., S. He, M. Chen, Y. Hou, X. Guo, C. Wei, Y. Han, and R. Yang, 2019, Quartz types and origins in the Paleozoic Wufeng-Longmaxi Formations, eastern Sichuan Basin, China: Implications for porosity preservation in shale reservoirs: Marine and Petroleum Geology, v. 106, p. 62-73.

Dong, T., N.B. Harris, L.J. Knapp, J.M. McMillan, and D.L. Bish, 2018, The effect of thermal maturity on geomechanical properties in shale reservoirs: An example from the Upper Devonian Duvernay Formation, Western Canada Sedimentary Basin: Marine and Petroleum Geology, v. 97, p. 137-153.

Dong, T., and N.B. Harris, 2020, The effect of thermal maturity on porosity development in the Upper Devonian-Lower Mississippian Woodford Shale, Permian Basin, US: Insights into the role of silica nanospheres and microcrystalline quartz on porosity preservation: International Journal of Coal Geology, v. 217, 103346.

Dong, Z., S.A. Holditch, and W.J. Lee, 2015, Resource estimation for shale gas reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 301-323.

Dongfeng, H., Z. Hanrong, N. Kai, and Y. Guangchun, 2014, Preservation conditions for marine shale gas at the southeastern margin of the Sichuan Basin and their controlling factors: Natural Gas Industry B, v. 1, p. 178-184.

Donohue, A. M., 1981, Shale gas in the southern area of New York state: Part II. Experience of locating and drilling four shale-gas wells in New York state: U.S. Department of Energy Technical Report DOE/MC/12697-T2.

Donovan, A.D., J. Evenick, L. Banfield, N. McInnis, and W. Hill, 2017, An organofacies-based mudstone classification for unconventional tight rock and source rock plays: Unconventional Resources Technology Conference, URTeC 2715154, 15 p. <http://archives.datapages.com/data/urtec/2017/2715154.html>

Dopkin, D., and J. Wang, 2010, Increasing the relevance of surface seismic data in unconventional plays: World Oil, v. 231, no. 5, p. 50-52.

Dopkin, D., J. Wang, and S.P. Singh, 2013, Full-azimuth 3-D characterizes shales: American Oil & Gas Reporter, v. 56, no. 7, p. 130-135.

Dotsey, P., 2011, Logs reveal Marcellus sweet spots: American Oil & Gas Reporter, v. 54, no. 3, p. 91-94.

Doust, H., 2010, The exploration play: what do we mean by it?: AAPG Bulletin, v. 94, p. 1657-1672.

Downey, M.W., J.A. Garvin, and A.E. Downey, 2013, Industry players still have much to learn about exploiting shales, part 2: American Oil & Gas Reporter, v. 56, no. 2, p. 52-59.

Drake, R.M., II, J.R. Hatch, C.J. Schenk, R.R. Charpentier, T.R. Klett, P.A. Le, H.M. Leathers, M.E. Brownfield, S.B. Gaswirth, K.R. Marra, J.K. Pitman, C.J. Potter, and M.E. Tennyson, 2015, Assessment of undiscovered oil and gas resources in the Cherokee Platform Province area of Kansas, Oklahoma, and Missouri, 2015: U.S. Geological Survey Fact Sheet 2015-3054, 2 p. <http://pubs.er.usgs.gov/publication/fs20153054>

Drake, W.R., and S.J. Hawkins, 2012, A sequence stratigraphic framework for the Niobrara Formation in the Denver-Julesburg Basin: AAPG Search and Discovery Article #50757, 29 p. <http://www.searchanddiscovery.com/documents/2012/50757drake/ndx_drake.pdf>

Driskill, B., N. Suurmeyer, S. Rilling-Hall, A. Govert, and A. Garbowicz, 2012, Reservoir description of the subsurface Eagle Ford Formation, Maverick Basin area, south Texas, USA: SPE Paper 154528, 23 p.

Driskill, B., J. Walls, J. DeVito, and S.W. Sinclair, 2013, Applications of SEM imaging to reservoir characterization in the Eagle Ford Shale, south Texas, U.S.A., in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 115-136.

Du, S., S. Pang, and Y. Shi, 2018, A new and more precise experiment method for characterizing the mineralogical heterogeneity of unconventional hydrocarbon reservoirs: Fuel, v. 232, p. 666-671.

Du, X., X. Song, M. Zhang, Y. Lu, Y. Lu, P. Chen, Z. Liu, and S. Yang, 2015, Shale gas potential of the Lower Permian Gufeng Formation in the western area of the Lower Yangtze Platform, China: Marine and Petroleum Geology, v. 67, p. 526-543.

Duan, D., D. Zhang, X. Ma, Y. Yang, Y. Ran, and J. Mao, 2018, Chemical and structural characterization of thermally simulated kerogen and its relationship with microporosity: Marine and Petroleum Geology, v. 89, p. 4-13.

Duan, S., M. Gu, M. Tao, and X. Xian, 2020, Adsorption of methane on shale: Statistical physics model and site energy distribution studies: Energy & Fuels, v. 34, p. 304-318.

Dubiel, R.F., 2007, Sequence stratigraphy applied to the oil and gas assessment of the Lewis Shale total petroleum system, San Juan Basin, Colorado and New Mexico: Mountain Geologist, v. 44, no. 4, p. 155-173.

Ducros, M., W. Sassi, R. Vially, T. Euzen, and V. Crombez, 2017, 2-D basin modeling of the Western Canada Sedimentary Basin across the Montney-Doig system: Implications for hydrocarbon migration pathways and unconventional resources potential, in M.A. AbuAli, I. Moretti, and H.M. Nordgård Bolås, eds., Petroleum systems analysis—Case studies: AAPG Memoir 114, p. 117-134.

Duey, R., 2010, Common sense for uncommon plays: Hart Energy Publishing, E&P, v. 83, no. 1, p. 10-11.

Duey, R., 2011, Operators take a closer look at the Utica: Hart Energy Publishing, E&P, v. 84, no. 2, p. 67, 69.

Duey, R., 2011, Horn River is a play for the ages: Hart Energy Publishing, E&P, v. 84, no. 5, p. 70-77.

Duey, R., 2011, Monterey shale—California’s sleeping giant?: Hart Energy Publishing, E&P, v. 84, no. 6, p. 68-72.

Duey, R., 2011, Independent looks east for the Eagle Ford: Hart Energy Publishing, E&P, v. 84, no. 12, p. 10, 12.

Duey, R., 2012, China: headed for a shale gale?: Hart Energy Publishing, E&P, v. 85, no. 2, p. 33.

Duey, R., 2012, Geophysics has a role in shale plays: Hart Energy Publishing, E&P, v. 85, no. 2, p. 54, 56, 58.

Duey, R., 2012, Going grassroots in Pennsylvania: Hart Energy Publishing, E&P, v. 85, no. 6, p. 8, 10-11. (Marcellus)

Duey, R., 2013, Experiments in shales: Hart Energy Publishing, E&P, v. 86, no. 3, p. 7.

Duey, R., 2013, Pennsylvania riding high: Hart Energy Publishing, E&P, v. 86, no. 11, p. 10, 12. (Marcellus)

Duey, R., 2013, Cracking the reservoir code: Hart Energy Publishing, E&P, v. 86, no. 11, p. 27.

Duey, R., 2013, Gale or gust?: Hart Energy Publishing, E&P, v. 86, no. 11, p. 34-48. (international shales)

Duey, R., 2014, What the data can tell us: Hart Energy Publishing, E&P, v. 87, no. 11, p. 48, 50.

Duey, R., 2015, Technology boosts returns in shales: Hart Energy Publishing, E&P, v. 88, no. 6, p. 32-36.

Duey, R., 2015, ‘Highflying’ Barnett: Hart Energy Publishing, E&P, v. 88, no. 6, p. 108-109.

Duey, R., 2015, The refracture debate: Hart Energy Publishing, E&P, v. 88, no. 7, p. 34, 37.

Duey, R., 2015, Marcellus still has plenty to offer: Hart Energy Publishing, E&P, v. 88, no. 11, p. 86, 88.

Duey, R., 2015, Marcellus-Urica shales: overview: Data-driven success, in Marcellus-Utica shales playbook: Houston, Hart Energy Publishing, p. 4-14.

Duey, R., 2017, Understanding NMR logs in shales: Hart Energy Publishing, E&P, v. 90, no. 3, p. 27.

Duey, R., 2017, Disruptive resources, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 4-12.

Duey, R., 2017, A breakthrough in reservoir characterization?, in Hydraulic fracturing techbook: Houston, Hart Energy Publishing, p. 48-51.

Duey, R., 2017, When is a major not a major?: Hart Energy Publishing, E&P, v. 90, no. 10, p. 28, 30. (Shell)

Duncan, P.M., and S. Williams-Stroud, 2009, Marcellus microseismic: Oil and Gas Investor, v. 29, no. 11, p. 65-67.

Duncan, P.M., 2013, Application areas driving microseismic: American Oil & Gas Reporter, v. 56, no. 2, p. 67-71.

Duncan, P.M., P.G. Smith, K. Smith, W.B. Barker, S. Williams-Stroud, and L. Eisner, 2013, Microseismic monitoring in early Haynesville development, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 219-236.

Duncan, P.M., and C.W. Neuhaus, 2015, Method improves microseismic results: American Oil & Gas Reporter, v. 58, no. 2, p. 69-73.

Dunham, C., and C. Sarica, 2013, Developing tools, practices for artificial lift applications critical in horizontal wells: American Oil & Gas Reporter, v. 56, no. 6, p. 108-116.

Dunnahoe, T., 2009, Green Point: the next big shale play?: Hart Energy Publishing, E&P, v. 82, no. 2, p. 71-73. (shale oil play?)

Dunnahoe, T., 2011, Is the Haynesville a sleeping giant?: Hart Energy Publishing, E&P, v. 84, no. 1, p. 71, 73.

Dunnahoe, T., 2011, Utica Shale is young but promising: Hart Energy Publishing, E&P, v. 84, no. 2, 71-72.

Dunnahoe, T., 2011, Poland poised for productive shale development: Hart Energy Publishing, E&P, v. 84, no. 6, p. 42-47.

Dunnahoe, T., 2013, Dry fracing transforms water use in unconventional developments: Oil & Gas Journal, v. 111.9, p. 64, 66.

Dunnahoe, T., 2015, Oil-price plunge raises questions about unconventional plays: Oil & Gas Journal, v. 113.1, p. 42-43. (break-even price)

Dunnahoe, T., 2015, International shale skepticism: Oil & Gas Journal, v. 113.3, p. 24.

Dunnahoe, T., 2017, Unconventional growth: Oil & Gas Journal, v. 115.11, p. 14.

Dunnahoe, T., 2017, Argentina exploration spend increases, operations underway: Oil & Gas Journal, v. 115.12, p. 38-39. (Vaca Muerta shale)

Durham, L.S., 2005, Barnett Shale play going strong: AAPG Explorer, v. 26, no. 5, p. 4, 6. <http://www.aapg.org/explorer/2005/05may/barnett_shale.cfm>

Durham, L.S., 2006, Texas reservoir chased under urban setting; Barnett Shale a stimulating play: AAPG Explorer, v. 27, no. 2, p. 12-15. <http://www.aapg.org/explorer/2006/02feb/barnett_shale.cfm>

Durham, L.S., 2007, Barnett at core of career: AAPG Explorer, v. 28, no. 4, p. 18-20. <http://www.aapg.org/explorer/2007/04apr/dan_steward.cfm>

Durham, L.S., 2007, Tight shales popular, have issues: AAPG Explorer, v. 28, no. 6, p. 40, 43. <http://www.aapg.org/explorer/2007/06jun/unconventional_reservoirs.cfm>

Durham, L.S., 2007, Gas powering Utah activity, shale potential to be tested: AAPG Explorer, v. 28, no. 7, p. 12-14. <http://www.aapg.org/explorer/2007/07jul/utah_activity.cfm>

Durham, L.S., 2007, Locals reaping benefits, hot Barnett play creating wealth: AAPG Explorer, v. 28, no. 9, p. 46-47. <http://www.aapg.org/explorer/2007/09sep/barnett_wealth.cfm>

Durham, L.S., 2007, Barnett Shale play can be complex, their success doesn’t ensure yours: AAPG Explorer, v. 28, no. 9, p. 48-49. <http://www.aapg.org/explorer/2007/09sep/barnett_complex.cfm>

Durham, L.S., 2007, Barnett ‘hits’ don’t rule out misses; still a ‘statistical play’: AAPG Explorer, v. 28, no. 10, p. 51. <http://www.aapg.org/explorer/2007/10oct/barnett_shale.cfm>

Durham, L.S., 2008, Appalachian Basin’s Marcellus—the new target; another shale making seismic waves: AAPG Explorer, v. 29, no. 3, p. 6-10. <http://www.aapg.org/explorer/2008/03mar/marcellus.cfm>

Durham, L.S., 2008, Complex targets now in sight; prices, technology make shales hot: AAPG Explorer, v. 29, no. 7, p. 10. <http://www.aapg.org/explorer/2008/07jul/shales.cfm>

Durham, L.S., 2008, A spike in interest and activity; Louisiana play a ‘company maker?’: AAPG Explorer, v. 29, no. 7, p. 18, 20, 36. <http://www.aapg.org/explorer/2008/07jul/haynesville.cfm>

Durham, L.S., 2008, A public and private play; Marcellus making east coast buzz: AAPG Explorer, v. 29, no. 7, p. 22, 26. <http://www.aapg.org/explorer/2008/07jul/marcellus.cfm>

Durham, L.S., 2008, Block party?; Landowners link arms for leases: AAPG Explorer, v. 29, no. 7, p. 24, 26. <http://www.aapg.org/explorer/2008/07jul/shalelease.cfm>

Durham, L.S., 2008, Guess what? It’s complex. Woodford joins shale parade: AAPG Explorer, v. 29, no. 8, p. 26, 28. <http://www.aapg.org/explorer/2008/08aug/woodford.cfm>

Durham, L.S., 2008, Technology integration pays off. Shale experiences to be shared: AAPG Explorer, v. 29, no. 8, p. 30, 34. <http://www.aapg.org/explorer/2008/08aug/fayetteville.cfm>

Durham, L.S., 2009, West’s gas plays feel price squeeze: AAPG Explorer, v. 30, no. 4, p. 22,24. <http://www.aapg.org/explorer/2009/04apr/shales0409.cfm>

Durham, L.S., 2009, Integrated data aid decisions. Shale calls for the unconventional: AAPG Explorer, v. 30, no. 5, p. 8, 10. <http://www.aapg.org/explorer/2009/05may/shale0509.cfm>

Durham, L.S., 2009, No recession for the Haynesville; shale play decline rates in perspective: AAPG Explorer, v. 30, no. 7, p. 10, 12. <http://www.aapg.org/explorer/2009/07jul/haynesville0709.cfm>

Durham, L.S., 2009, Haynesville vs. Barnett; Is my shale better than your shale?: AAPG Explorer, v. 30, no. 9, p. 14, 16. <http://www.aapg.org/explorer/2009/09sep/shale0909.cfm>

Durham, L.S., 2009, Shale completions can get tricky; measurements, planning optimize production: AAPG Explorer, v. 30, no. 11, p. 16, 18. <http://www.aapg.org/explorer/2009/11nov/fracture1109.cfm>

Durham, L.S., 2010, A different breed of cat, Eagle Ford joins shale elite: AAPG Explorer, v. 31, no. 1, p. 20, 24. <http://www.aapg.org/explorer/2010/01jan/eagleford0110.cfm>

Durham, L.S., 2010, Europe play in early stages; Poland Silurian shale ready for action: AAPG Explorer, v. 31, no. 2, p. 14, 18. <http://www.aapg.org/explorer/2010/02feb/poland.cfm>

Durham, L.S., 2010, Illinois Basin shale gets tech focus: AAPG Explorer, v. 31, no. 3, p. 38, 40. (New Albany Shale) <http://www.aapg.org/explorer/2010/03mar/illinois0310.cfm>

Durham, L.S., 2010, Shale gas success echoes through Rockies: AAPG Explorer, v. 31, no. 6, p. 12, 18. <http://www.aapg.org/explorer/2010/06jun/shalesuccess0610.cfm>

Durham, L.S., 2010, Activity begins on Utah’s shale gas potential: AAPG Explorer, v. 31, no. 6, p. 14, 16. <http://www.aapg.org/explorer/2010/06jun/utahgas0610.cfm>

Durham, L.S., 2010, New: Exploring for shales; U.S. shale expertise now being exported: AAPG Explorer, v. 31, no. 8, p. 22, 27. <http://www.aapg.org/explorer/2010/08aug/global0810.cfm>

Durham, L.S., 2010, Looking for Haynesville sweet spots; data boom boosts stratigraphy understanding: AAPG Explorer, v. 31, no. 9, p. 18, 20. <http://www.aapg.org/explorer/2010/09sep/haynesville0910.cfm>

Durham, L.S., 2010, A mid-Devonian ‘perfect storm’; Marcellus owes its ‘beauty’ to algal blooms: AAPG Explorer, v. 31, no. 9, p. 26, 33. <http://www.aapg.org/explorer/2010/09sep/marcellus0910.cfm>

Durham, L.S., 2010, Data indicate sweet spots, dead zones; shales—similar, yet so different: AAPG Explorer, v. 31, no. 9, p. 28, 33. <http://www.aapg.org/explorer/2010/09sep/shalegas0910.cfm>

Durham, L.S., 2010, A trend toward multi-client shoots; shale plays prop land seismic action: AAPG Explorer, v. 31, no. 10, p. 12, 16. <http://www.aapg.org/explorer/2010/10oct/seismiconshore1010.cfm>

Durham, L.S., 2010, Outcrops instructive for Eagle Ford; Boquillas appears to have same depositional setting: AAPG Explorer, v. 31, no. 11, p. 6, 8. <http://www.aapg.org/explorer/2010/11nov/eagle_ford1110.cfm>

Durham, L.S., 2010, Shales, acquisitions create new data types; unique wells = unique data: AAPG Explorer, v. 31, no. 11, p. 18. <http://www.aapg.org/explorer/2010/11nov/new_data1110.cfm>

Durham, L.S., 2010, Getting on the geosciences mechanics bandwagon; shale wells tend to be custom jobs: AAPG Explorer, v. 31, no. 12, p. 18, 20, 41. <http://www.aapg.org/explorer/2010/12dec/geomechanics1210.cfm>

Durham, L.S., 2010, A controlled process; shale hydrofrac concerns addressed: AAPG Explorer, v. 31, no. 12, p. 26-27. <http://www.aapg.org/explorer/2010/12dec/shale_hydro1210.cfm>

Durham, L.S., 2011, Early days in the Collingwood Shale: Oil and Gas Investor, v. 31, no. 1, p. 69-71.

Durham, L., 2011, Seismic rebounds: Oil and Gas Investor, v. 31, no. 2, p. 71-73.

Durham, L.S., 2011, ‘Mix of players’ seeking more data; 3-D data a big need (again) at Eagle Ford: AAPG Explorer, v. 32, no. 3, p. 16, 42. <http://www.aapg.org/explorer/2011/03mar/3d_eagle0311.cfm>

Durham, L.S., 2011, Haynesville hangs in: Oil and Gas Investor, v. 31, no. 3, p. 73-76.

Durham, L., 2011, Fayetteville revisited: Oil and Gas Investor, v. 31, no. 4, p. 75-78.

Durham, L.S., 2011, Marcellus core areas differentiated; exploration approaches affected: AAPG Explorer, v. 32, no. 5, p. 14, 16. <http://www.aapg.org/explorer/2011/05may/mar_update0511.cfm>

Durham, L.S., 2011, Shale gas affects LNG economics; plentiful supplies, distant markets: AAPG Explorer, v. 32, no. 5, p. 18, 20. <http://www.aapg.org/explorer/2011/05may/lng0511.cfm>

Durham, L.S., 2011, Sprawling Niobrara has multiple models; new plays cropping up: AAPG Explorer, v. 32, no. 6, p. 8, 10. <http://www.aapg.org/explorer/2011/06jun/niobrara0611.cfm>

Durham, L.S., 2011, Study seeks to inject science into frack debate: AAPG Explorer, v. 32, no. 7, p. 16, 19. <http://www.aapg.org/explorer/2011/07jul/ut_frack0711.cfm>

Durham, L.S., 2011, Similar in age and lithology to Eagle Ford, Tuscaloosa another shale playground: AAPG Explorer, v. 32, no. 8, p. 16, 20, 22. <http://www.aapg.org/explorer/2011/08aug/tuscaloosa0811.cfm>

Durham, L.S., 2011, 3-D survey eyed for marine shale: AAPG Explorer, v. 32, no. 8, p. 18. <http://www.aapg.org/explorer/2011/08aug/3d0811.cfm>

Durham, L.S., 2011, Midstream players focus on myriad challenges: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 82-85.

Durham, L.S., 2011, 3-D helped get view of Marcellus area: AAPG Explorer, v. 32, no. 9, p. 12. <http://www.aapg.org/explorer/2011/09sep/marcellus3d0911.cfm>

Durham, L.S., 2011, With Marcellus, it’s all about the fractures: AAPG Explorer, v. 32, no. 10, p. 24, 30. <http://www.aapg.org/explorer/2011/10oct/marcellus1011.cfm>

Durham, L.S., 2011, USGS and Europe assess global resource potential: AAPG Explorer, v. 32, no. 10, p. 26. <http://www.aapg.org/explorer/2011/10oct/europe1011.cfm>

Durham, L.S., 2011, Global shale hunters have insights to share: AAPG Explorer, v. 32, no. 10, p. 28, 30. <http://www.aapg.org/explorer/2011/10oct/global_shale1011.cfm>

Durham, L.S., 2011, ‘Nano balls’ prop shale fractures: AAPG Explorer, v. 32, no. 12. <http://www.aapg.org/explorer/2011/12dec/nanfrac1211.cfm>

Durham, L.S., 2012, Study cautions overenthusiasm on shale capacity: AAPG Explorer, v. 33, no. 2, p. 6, 8. <http://www.aapg.org/explorer/2012/02feb/energy_study0212.cfm>

Durham, L.S., 2012, Shales give basis for rosy NPC resource report: AAPG Explorer, v. 33, no. 2, p. 10, 22. <http://www.aapg.org/explorer/2012/02feb/npc0212.cfm>

Durham, L.S., 2012, Fayetteville model has ‘predictive value’: AAPG Explorer, v. 33, no. 3, p. 20, 22. <http://www.aapg.org/explorer/2012/03mar/fayetteville0312.cfm>

Durham, L.S., 2012, We live in a material world…and shales need ‘material plans’: AAPG Explorer, v. 33, no. 7, p. 22, 30. <http://www.aapg.org/explorer/2012/07jul/shales0712.cfm>

Durham, L.S., 2012, Mancos-Niobara play full of surprises; now, if gas prices would cooperate…: AAPG Explorer, v. 33, no. 8, p. 14, 18. <http://www.aapg.org/explorer/2012/08aug/mancos0812.cfm>

Durham, L.S., 2012, What is the tally of Niobrara value? ’09 Jake well ignited boom: AAPG Explorer, v. 33, no. 8, p. 20. <http://www.aapg.org/explorer/2012/08aug/niobrara0812.cfm>

Durham, L.S., 2012, Pole shales estimated: AAPG Explorer, v. 33, no. 9, p. 28. <http://www.aapg.org/explorer/2012/09sep/polish_shale0912.cfm>

Durham, L.S., 2012, Making connections; Eagle Ford, meet Marcellus: AAPG Explorer, v. 33, no. 10, p. 14, 16, 20. <http://www.aapg.org/explorer/2012/10oct/eagle_ford1012.cfm>

Durham, L.S., 2012, Some are calling it Louisiana Eagle Ford; nuisance zone becomes oil target: AAPG Explorer, v. 33, no. 10, p. 18, 20. (Tuscaloosa) <http://www.aapg.org/explorer/2012/10oct/nuisance_zone1012.cfm>

Durham, L.S., 2013, Sahara Desert shows potential for shale gas: AAPG Explorer, v. 34, no. 1, p. 16. <http://www.aapg.org/explorer/2013/01jan/sahara0113.cfm>

Durham, L.S., 2013, U.K. tackling the pros and cons of shale plays: AAPG Explorer, v. 34, no. 2, p. 22. <http://www.aapg.org/explorer/2013/02feb/uk_shale0213.cfm>

Durham, L.S., 2013, Eagle Ford data base provides a sweet spot; finding production trends, parameters: AAPG Explorer, v. 34, no. 3, p. 16, 18. <http://www.aapg.org/explorer/2013/03mar/eagleford0313.cfm>

Durham, L.S., 2013, Strategies for success, an unconventional approach: AAPG Explorer, v. 34, no. 4, p. 6, 12. <http://www.aapg.org/explorer/2013/04apr/success0413.cfm>

Durham, L.S., 2013, Study gives Barnett Shale a revised future: AAPG Explorer, v. 34, no. 4, p. 8, 12. <http://www.aapg.org/explorer/2013/04apr/barnett0413.cfm>

Durham, L.S., 2013, Aeromagnetic data can shape drilling program, looking down on the Marcellus: AAPG Explorer, v. 34, no. 4, p. 14. <http://www.aapg.org/explorer/2013/04apr/marcellus0413.cfm>

Durham, L.S., 2013, Study data provide new shale perspective, North America vs. European shales: AAPG Explorer, v. 34, no. 4, p. 16. <http://www.aapg.org/explorer/2013/04apr/american0413.cfm>

Durham, L.S., 2013, Flowback water provides ‘unique messages’: AAPG Explorer, v. 34, no. 7, p. 22, 24. <http://www.aapg.org/explorer/2013/07jul/urtec_flow0713.cfm>

Durham, L.S., 2014, Permeability trumps storage in shale play: AAPG Explorer, v. 35, no. 4, p. 56. <http://www.aapg.org/publications/news/explorer/details/articleid/8473/permeability-trumps-storage-in-shale-play>

Durham, L.S., 2014, Shale: An evolution, not a revolution: AAPG Explorer, v. 35, no. 5, p. 58, 57. <http://www.aapg.org/publications/news/explorer/column/articleid/9531/shale-an-evolution-not-a-revolution>

Durham, L.S., 2014, Cane Creek Shale keeping Utah in energy mix; UGS multi-year study continues: AAPG Explorer, v. 35, no. 6, p. 20, 22. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10188/cane-creek-shale-keeping-utah-in-energy-mix>

Durham, L.S., 2014, Unconventional targets give San Juan new life: AAPG Explorer, v. 35, no. 6, p. 24. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10191/unconventional-targets-give-san-juan-new-life>

Durham, L.S., 2014, Amid boom, shale secrets still elusive: AAPG Explorer, v. 35, no. 7, p. 16, 18, 55. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10750/amid-boom-shale-secrets-still-elusive>

Durham, L.S., 2014, Unconventional fracturing: AAPG Explorer, v. 35, no. 7, p. 26. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10754/unconventional-fracturing>

Durham, L.S., 2014, Surprise! Hot spots also can be sweet (spots): AAPG Explorer, v. 35, no. 7, p. 32. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10755/surprise-hot-spots-also-can-be-sweet-spots>

Durham, L.S., 2014, Independents and unconventionals; flexibility rules in shale fields: AAPG Explorer, v. 35, no. 8, p. 6, 10. <http://www.aapg.org/publications/news/explorer/details/articleid/11270/flexibility-rules-in-shale-fields>

Durham, L.S., 2014, Little known TMS play sees drilling surge: AAPG Explorer, v. 35, no. 8, p. 12, 16. <http://www.aapg.org/publications/news/explorer/details/articleid/11302/little-known-tms-play-sees-drilling-surge>

Durham, L.S., 2014, Little known TMS play sees drilling surge: AAPG Explorer, v. 35, no. 8, p. 12. (Tuscaloosa Marine Shale) <http://www.aapg.org/publications/news/explorer/details/articleid/11302/little-known-tms-play-sees-drilling-surge>

Durham, L.S., 2014, Resistivity for determining hydrocarbon distribution: AAPG Explorer, v. 35, no. 9, p. 42. (Tuscaloosa Marine Shale) <http://www.aapg.org/publications/news/explorer/details/articleid/11790/resistivity-for-determining-hydrocarbon-distribution>

Durham, L.S., 2015, Optimism deferred; oil price slams beleaguered TMS play: AAPG Explorer, v. 36, no. 2, p. 46. (Tuscaloosa Marine Shale) <http://www.aapg.org/publications/news/explorer/details/articleid/15864/oil-price-slams-beleaguered-tms-play>

Durham, L.S., 2015, Unconventionals update; America’s on top — now what?: AAPG Explorer, v. 36, no. 7, p. 16, 18, 22. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/21120/america%E2%80%99s-on-top-%E2%80%93-now-what>

Durham, L.S., 2016, Saudi Arabia looks to unconventionals: AAPG Explorer, v. 37, no. 2, p. 18, 20. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/26759/saudi-arabia-looks-to-unconventionals>

Durst, D.G., 2017, Multilaterals hold promise for shales: American Oil & Gas Reporter, v. 60, no. 7, p. 66-69.

Durst, D.G., 2017, Multilateral architectures hold major potential in resource plays, part two: American Oil & Gas Reporter, v. 60, no. 8, p. 64-71.

Dustin, M.K., J.R. Bargar, A.D. Jew, A.L. Harrison, C. Joe-Wong, D.L. Thomas, G.E. Brown, Jr., and K. Maher, 2018, Shale kerogen: Hydraulic fracturing fluid interactions and contaminant release: Energy & Fuels, v. 32, p. 8966-8977.

Duttlinger, D., 2005, Opportunity exists in Michigan’s mature Antrim black shale: American Oil and Gas Reporter, v. 48, no. 5, p. 31.

Duttlinger, D., 2006, Geology is first key to success in gas shales: American Oil and Gas Reporter, v. 49, no. 13, p. 33. <http://www.pttc.org/columns/aogrcodec06.htm>

Dyman, T.S., 1981, Eastern Gas Shales Project (EGSP) data files: U.S. Geological Survey Open-File Report OF 81-0598, 57 p.

Dynan, M., and S. Roach, 2015, Shale 2.0: Excelling in new commodity price environment: Hart Energy Publishing, E&P, v. 88, no. 12, p. 56-57.

East, J.A., 2012, Thermal maturity map of Devonian shale in the Illinois, Michigan, and Appalachian basins of North America: U.S. Geological Survey, Scientific Investigations Map 3214.

Eastman, H., 2013, Petrography of the Marcellus Shale in well WV6, Monongalia County, West Virginia: AAPG Search and Discovery Article #50811, 6 p. <http://www.searchanddiscovery.com/documents/2013/50811eastman/ndx_eastman.pdf>

Eaton, K., 2014, Marcellus sees multi-measurement study: AAPG Explorer, v. 35, no. 10, p. 12, 14. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/12426/marcellus-sees-multi-measurement-study>

Eaton, S.R., 2010, Utica emerges in Québec, shale play extends to Canada: AAPG Explorer, v. 31, no. 1, p. 10, 12, 24. <http://www.aapg.org/explorer/2010/01jan/shale0110.cfm>

Eaton, S.R., 2010, Another shale shows promise; Frederick Brook Shale spurs Canadian exploration: AAPG Explorer, v. 31, no. 8, p. 6, 8, 10. <http://www.aapg.org/explorer/2010/08aug/fredrick0810.cfm>

Eble, C.F., P.C. Hackley, T.M. Parris, and S.F. Greb, 2021, Organic petrology and geochemistry of the Sunbury and Ohio Shales in eastern Kentucky and southeastern Ohio: AAPG Bulletin, v. 105, p. 493-515.

Edman, J.D., and D. Jarvie, 2006, Use of geochemical analyses to evaluate shale gas plays (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 120.

Edman, J., 2007, Application of hydrocarbon gas isotope data to tight gas sand and shale gas exploration and production in the Rocky Mountains: RMAG Outcrop, v. 56, no. 8, p. 1-14.

Edwards, B.D., E.J. Shepherd, and N. Deutsch, 2011, Hydraulic fracturing: protecting against legal and regulatory risk: Oil & Gas Journal, v. 109.15, p. 22-30.

Egan, M., 2013, Better seismic delineating shale plays: American Oil & Gas Reporter, v. 56, no. 7, p. 125-129.

Egenhoff, S.O., and N.S. Fishman, 2017, The Ordovician Toyen Shale, and its eight steps through diagenesis — An overview: AAPG Search and Discovery Article #51358, 23 p. <http://www.searchanddiscovery.com/pdfz/documents/2017/51358egenhoff/ndx_egenhoff.pdf.html>

EIA, 2013, Technically recoverable shale oil and shale gas resources: An assessment of 137 shale formations in 41 countries outside the United States: U.S. Energy Information Administration, 730 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: South Africa: U.S. Energy Information Administration, 14 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/South\_Africa\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/South_Africa_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Chad: U.S. Energy Information Administration, 36 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Chad\_2014.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Chad_2014.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Turkey: U.S. Energy Information Administration, 13 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Turkey\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Turkey_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: India and Pakistan: U.S. Energy Information Administration, 42 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/India\_Pakistan\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/India_Pakistan_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Argentina: U.S. Energy Information Administration, 29 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Argentina\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Argentina_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Other western Europe: U.S. Energy Information Administration, 40 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Northern\_Western\_Europe\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Northern_Western_Europe_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Kazakhstan: U.S. Energy Information Administration, 37 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Kazakhstan\_2014.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Kazakhstan_2014.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Jordan: U.S. Energy Information Administration, 12 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Jordan\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Jordan_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Poland: U.S. Energy Information Administration, 32 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Poland\_Lithuania\_Kaliningrad\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Poland_Lithuania_Kaliningrad_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Morocco: U.S. Energy Information Administration, 13 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Morocco\_WesternSahara\_Mauritania\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Morocco_WesternSahara_Mauritania_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Brazil: U.S. Energy Information Administration, 21 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Brazil\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Brazil_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Other South America: U.S. Energy Information Administration, 19 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Other\_South\_America\_Bolivia\_Chile\_Paraguay\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Other_South_America_Bolivia_Chile_Paraguay_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Mongolia: U.S. Energy Information Administration, 13 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Mongolia\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Mongolia_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Spain: U.S. Energy Information Administration, 9 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Spain\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Spain_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: United Kingdom: U.S. Energy Information Administration, 26 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/UK\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/UK_2013.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: United Arab Emirates: U.S. Energy Information Administration, 22 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/UAE\_2014.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/UAE_2014.pdf)

EIA, 2015, Technically recoverable shale oil and shale gas resources: Tunisia: U.S. Energy Information Administration, 10 p. [www.eia.gov/analysis/studies/worldshalegas/pdf/Tunisia\_2013.pdf](http://www.eia.gov/analysis/studies/worldshalegas/pdf/Tunisia_2013.pdf)

Ejofodomi, E., R. Sethi, E. Aktas, J. Padgett, B. Mackay, A. Mirakyan, B. McCrackin, and C. Douglas, 2018, Enhanced comprehension of production mechanisms improves Wolfcamp performance by 70%: World Oil, v. 239, no. 11, p. 51-55.

Elgmati, M., H. Zhang, B. Bai, and R. Flori, 2011, Submicron pore characterization of shale gas plays: SPE Paper 144050, 19 p.

Elgmati, M., M. Zobaa, H. Zhang, B. Bai, and F. Oboh-Ikuenobe, 2011, Palynofacies analysis and submicron-pore modeling of shale-gas plays: SPE Paper 144267, 10 p.

Elison, P., J. Niederau, C. Vogt, and C. Clauser, 2019, Quantification of thermal conductivity uncertainty for basin modeling: AAPG Bulletin, v. 103, p. 1787-1809. (uncertainty of maturity in PetroMod)

Ellison, M., 2014, Microseismic reveals fracture patterns: American Oil & Gas Reporter, v. 57, no. 3, p. 82-85.

Elsaig, M., K. Aminian, S. Ameri, and M. Zamirian, 2016, Study analyzes Marcellus petrophysics: American Oil & Gas Reporter, v. 59, no. 12, p. 63-65.

ElSakka, A., G.M. Hamada, E. Padmanabhan, and A.M. Salim, 2018, South east Asia contains abundant, untapped shale reservoirs: Oil & Gas Journal, v. 116.3, p. 34-44.

El Sharawy, M.S., and G.R. Gaafar, 2019, Pore-throat size distribution indices and their relationships with the petrophysical properties of conventional and unconventional clastic reservoirs: Marine and Petroleum Geology, v. 99, p. 122-134.

Elston, J., 2010, Realm Energy targeting continental Europe as newest shale frontier: American Oil & Gas Reporter, v. 53, no. 6, p. 66-70.

Emadi, H., M.Y. Soliman, and R. Samuel, 2014, Study analyzes shale swelling impacts: American Oil & Gas Reporter, v. 57, no. 13, p. 58, 61-63, 135. (swelling clays)

Emmanuel, S., M. Eliyahu, R.J. Day-Stirrat, R. Hofmann, and C.I. Macaulay, 2016, Impact of thermal maturation on nano-scale elastic properties of organic matter in shales: Marine and Petroleum Geology, v. 70, p. 175-184.

Enderlin, M.B., and H. Alsleben, 2012, A method for evaluating the effects of confining stresses and rock strength on fluid flow along the surfaces of mechanical discontinuities in low-permeability rocks, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 151-171.

Engelder, T., and G.G. Lash, 2008, Marcellus Shale play’s vast resource potential creating stir in Appalachia: American Oil & Gas Reporter, v. 51, no. 6, p. 77-87.

Engelder, T., G.G. Lash, and R.S. Uzcátegui, 2009, Joint sets that enhance production from Middle and Upper Devonian gas shales of the Appalachian Basin: AAPG Bulletin, v. 93, p. 857-889.

Engelder, T., L.M. Cathles, and L.Taras Bryndzia, 2014, The fate of residual treatment water in gas shale: Journal of Unconventional Oil and Gas Resources, v. 7, p. 33-48.

Engelder, T., 2014, Commentary: Truth and lies about hydraulic fracturing: AAPG Explorer, v. 35, no. 10, p. 62-63. <http://www.aapg.org/publications/news/explorer/details/articleid/12416/truth-and-lies-about-hydraulic-fracturing>

Engle, M.A., and E.L. Rowan, 2014, Geochemical evolution of produced waters from hydraulic fracturing of the Marcellus Shale, northern Appalachian Basin: A multivariate compositional data analysis approach: International Journal of Coal Geology, v. 126, p. 45-56.

Engle, M.A., I.M. Cozzarelli, and B.D. Smith, 2014, USGS investigations of water produced during hydrocarbon reservoir development: USGS Fact Sheet 2014-3104, 4 p.

English, J.M., K.L. English, D.V. Corcoran, and F. Toussaint, 2016, Exhumation charge: The last gasp of a petroleum source rock and implications for unconventional shale resources: AAPG Bulletin, v. 100, p. 1-16.

Enomoto, C.B., J.L. Coleman, Jr., C.S. Swezey, P.W. Niemeyer, and F.T. Dulong, 2015, Geochemical and mineralogical sampling of the Devonian shales in the Broadtop Synclinorium, Appalachian Basin, in Virginia, West Virginia, Maryland, and Pennsylvania: U.S. Geological Survey, Open-File Report 2015-1061, 32 p. <http://pubs.usgs.gov/of/2015/1061/>

Enomoto, C.B., M.H. Trippi, D.K. Higley, W.A. Rouse, F.T. Dulong, T.R. Klett, T.J. Mercier, M.E. Brownfield, H.M. Leathers-Miller, T.M. Finn, K.R. Marra, P.A. Le, C.A. Woodall, and C.J. Schenk, 2018, Assessment of undiscovered continuous gas resources in Upper Devonian shales of the Appalachian Basin Province, 2017: U.S. Geological Survey Fact Sheet 2018-3018, 2 p. <https://pubs.er.usgs.gov/publication/fs20183018>

Enriquez, D.A., T. Zhang, X. Sun, D. Meng, and Y. Zhang, 2020, Methane resaturation in Barnett Formation core plugs and new approach for determination of post-coring gas loss: Marine and Petroleum Geology, v. 118, 104430.

Eoff, J.D., 2012, Global prediction of continuous hydrocarbon accumulations in self-sourced reservoirs: U.S. Geological Survey Open-File Report 2012–1091, 4 sheets. <http://pubs.usgs.gov/of/2012/1091/>

Eoff, J.D., 2012, Correlation of resource plays and biodiversity patterns: Accumulation of organic-rich shale tracks taxonomic turnover: GCAGS Journal, v. 1, p. 1-12.

Eoff, J.D., 2013, Shale hydrocarbon reservoirs: Some influences of tectonics and paleogeography during deposition, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 5-24.

Er, C., Y. Li, J. Zhao, R. Wang, Z. Bai, and Q. Han, 2016, Pore formation and occurrence in the organic-rich shales of the Triassic Chang-7 member, Yanchang Formation, Ordos Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 435-444.

Erdman, N., and N. Drenzek, 2013, Integrated preparation and imaging techniques for the microstructural and geochemical characterization of shale by scanning electron microscopy, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 7-14.

Ertug, K., M. Vecoli, and S. İnan, 2019, Palynofacies, paleoenvironment and thermalmaturity of early Silurian shales in Saudi Arabia (Qusaiba member of Qalibah Formation): Review of Palaeobotany and Palynology, v. 270, p. 8-18.

Eslinger, E., and R.V. Everett, 2012, Petrophysics in gas shales, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 419-451.

Esmaili, S., S.D. Mohaghegh, and A. Kalantari-Dahaghi, 2015, Marcellus Shale, pattern recognition study weighs parameters’ impact, part two: American Oil & Gas Reporter, v. 58, no. 2, p. 52-61.

Estes-Jackson, J.E., 2011, Revisiting and revitalizing the Niobrara in the central Rockies: Rocky Mountain Association of Geologists, Guidebook, CD-ROM.

Estrada, J.M., and R. Bhamidimarri, 2016, A review of the issues and treatment options for wastewater from shale gas extraction by hydraulic fracturing: Fuel, v. 182, p. 292-303.

Ethridge, S., T. Bredfeldt, K. Sheedy, S. Shirley, G. Lopez, and M. Honeycutt, 2015, The Barnett Shale: From problem formulation to rish management: Journal of Unconventional Oil and Gas Resources, v. 11, p. 95-110.

Etiope, G., A. Drobniak, and A. Schimmelmann, 2013, Natural seepage of shale gas and the origin of “eternal flames” in the northern Appalachian Basin, USA: Marine and Petroleum Geology, v. 43, p. 178-186.

Etminan, S.R., F. Javadpour, B.B. Maini, and Z. Chen, 2014, Measurement of gas storage processes in shale and of the molecular diffusion coefficient in kerogen: International Journal of Coal Geology, v. 123, p. 10-19.

Ettensohn, F.R., 1992, Controls on the origin of the Devonian-Mississippian oil and gas shales, east-central United States: Proceedings 1991 Eastern Oil Shale Symposium, p. 417-425.

Eubanks, D.L., 2008, BHI key in unconventional reservoirs: American Oil & Gas Reporter, v. 51, no. 10, p. 118-125.

Evenick, J.C., and T. McClain, 2013, Method for characterizing source rock organofacies using bulk rock composition, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 71-80.

Ewing, T.E., 2006, Mississippian Barnett Shale, Fort Worth Basin, north-central Texas: Gas-shale play with multi-trillion cubic foot potential: discussion: AAPG Bulletin, v. 90, p. 963-966.

Fan, D., and A. Ettehadtavakkol, 2017, Semi-analytical modeling of shale gas flow through fractal induced fracture networks with microseismic data: Fuel, v. 193, p. 444-459.

Fan, K., Y. Li, D. Elsworth, M. Dong, C. Yin, Y. Li, and Z. Chen, 2018, Three stages of methane adsorption capacity affected by moisture content: Fuel, v. 231, p. 352-360.

Fan, K., M. Dong, D. Elsworth, Y. Li, C. Yin, and Y. Li, 2018, A dynamic-pulse pseudo-pressure method to determine shale matrix permeability at representative reservoir conditions: International Journal of Coal Geology, v. 193, p. 61-72.

Fang, C., M. Amro, G. Jiang, and H. Lu, 2017, Laboratory studies of non-marine shale porosity characterization: Journal of Natural Gas Science and Engineering, v. 33, p. 1181-1189.

Faraj, B., H. Williams, G. Addison, B. McKinstry, R. Donaleshen, G. Sloan, J. Lee, T. Anderson, R. Leal, C. Anderson, C. Lafleur, and J. Ahlstrom, 2002, Gas shale potential of selected Upper Cretaceous, Jurassic, Triassic and Devonian shale formations in the WCSB of western Canada: implications for shale gas production: Des Plaines, Illinois, Gas Technology Institute, GRI-02/0233, compact disc, 285 p.

Faraj, B., H. Williams, G. Addison, and B. McKinstry, 2004, Gas potential of selected shale formations in the western Canadian sedimentary basin: GasTIPS, v. 10, no. 1, p. 21-25.

Farn, G., and B. Stillwell, 2009, Regional spotlight: Woodford Shale: Oil and Gas Investor, v. 29, no. 8, p. 15.

Farnsworth, B., 2014, Looking into liquids: Hart Energy Publishing, E&P, v. 87, no. 5, p. 130-136.

Farnsworth, B., 2015, Slowdown makes time to refine strategies, processes: Hart Energy Publishing, E&P, v. 88, no. 6, p. 39-42.

Farrell, A.A., 2012, Analytics optimize shale economics: American Oil & Gas Reporter, v. 55, no. 3, p. 101-105.

Fathi, E., and I.Y. Akkutlu, 2009, Matrix heterogeneity effects on gas transport and adsorption in coalbed and shale gas reservoirs: Transport in Porous Media, v. 80, p. 281-304.

Fathi, E., A. Tinni, and I.Y. Akkutlu, 2012, Correction to Klinkenberg slip theory for gas flow in nano-capillaries: International Journal of Coal Geology, v. 103, p. 51-59.

Fathi, E., and I.Y. Akkutlu, 2014, Multi-component gas transport and adsorption effects during CO2 injection and enhanced shale gas recovery: International Journal of Coal Geology, v. 123, p. 52-61.

Feng, G., Y. Zhu, G.G.X. Wang, S. Chen, Y. Wang, and W. Ju, 2019, Supercritical methane adsorption on overmature shale: Effect of pore structure and fractal characteristics: Energy & Fuels, v. 33, p. 8323-8337.

Feng, R., S. Chen, and Y. Pang, 2019, Simultaneous determination of permeability and diffusivity subject to dynamic sorption in gas shales: International Journal of Coal Geology, v. 216, 103294.

Feng, S., 2017, OPEC, U.S. shale matter: Oil and Gas Investor, v. 37, no. 11, p. 19.

Feng, W., F. Wang, J. Guan, J. Zhou, F. Wei, W. Dong, and Y. Xu, 2018, Geologic structure controls on initial productions of lower Silurian Longmaxi shale in south China: Marine and Petroleum Geology, v. 91, p. 163-178.

Feng, Z., F. Hao, D. Dong, S. Zhou, W. Wu, C. Xie, Y. Cai, and Z. Li, 2020, Geochemical anomalies in the Lower Silurian shale gas from the Sichuan Basin, China: Insights from a Rayleigh-type fractionation model: Organic Geochemistry, v. 142, 103981.

Fernworn, K., J. Zumberge, S. Brown, and W. Dow, 2006, Mud gas isotope analysis of a shale gas deviated well (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 120.

Ferrill, D.A., A.P. Morris, P.H. Hennings, and D.E. Haddad, 2014, Faulting and fracturing in shale and self-sourced reservoirs: Introduction: AAPG Bulletin, v. 98, p. 2161-2164.

Ferrill, D.A., R.N. McGinnis, A.P. Morris, K.J. Smart, Z.T. Sickmann, M. Bentz, D. Lehrmann, and M.A. Evans, 2014, Control of mechanical stratigraphy on bed-restricted jointing and normal faulting: Eagle Ford Formation, south-central Texas: AAPG Bulletin, v. 98, p. 2477-2506.

Fertl, W.H., and H.H. Rieke, III, 1980, Gamma Ray spectral evaluation techniques identify fractured shale reservoirs and source-rock characteristics: Journal of Petroleum Technology, v. 32, p. 2053-2062.

Fichter, J.K., K. Johnson, K. French, and R. Oden, 2009, Biocides control Barnett Shale fracturing fluid contamination: Oil & Gas Journal, v. 107.19, p. 38-44.

Fink, R., B.M. Krooss, Y. Gensterblum, and A. A.-Hildenbrand, 2017, Apparent permeability of gas shales—Superposition of fluid-dynamic and poro-elastic effects: Fuel, v. 199, p. 532-550.

Fink, R., B.M. Krooss, and A. Amann-Hildenbrand, 2017, Stress-dependence of porosity and permeability of the Upper Jurassic Bossier shale: an experimental study, in E.H. Rutter, J. Mecklenburgh, and K.G. Taylor, eds., Geomechanical and petrophysical properties of mudrocks: London, Geological Society, Special Publication 454.

Fink, R., A. Amann-Hildenbrand, P. Bertier, and R. Littke, 2018, Pore structure, gas storage and matrix transport characteristics of lacustrine Newark shale: Marine and Petroleum Geology, v. 97, p. 525-539.

Finley, A., 2017, Mowry Shale – Outcrop to production: AAPG Search and Discovery Article No. 10917, 25 p. <http://www.searchanddiscovery.com/pdfz/documents/2017/10916finley/ndx_finley.pdf.html>

Finn, T.M., and R.C. Johnson, 2005, The Hilliard-Baxter-Mancos Total Petroleum System, southwestern Wyoming province, in Petroleum systems and geologic assessment of oil and gas in the southwestern Wyoming province, Wyoming, Colorado, and Utah: U.S. Geological Survey Digital Data Series DDS-69-D, chapter 7.

Finnie, S., D. Cecil, and A. Goodisman, 2009, Regional spotlight: Barnett Shale: Oil and Gas Investor, v. 29, no. 2, p. 17.

Firouzi, M., K. Alnoaimi, A. Kovscek, and J. Wilcox, 2014, Klinkenberg effect on predicting and measuring helium permeability in gas shales: International Journal of Coal Geology, v. 123, p. 62-68.

Fischer, P.A., 2008, Unique rig design continues to attract operators: World Oil, v. 229, no. 10, p. 75-78.

Fisher, K., 2006, Barnett Shale fracture fairways aid E&P: World Oil, v. 226, no. 8, p. 83-86.

Fisher, K., R. Brown, L. Honeyman, A. Sharma, and T. Pope, 2014, Technologies enable Wolfbone success: American Oil & Gas Reporter, v. 57, no. 9, p. 95-101.

Fisher, M.K., C.A. Wright, B.M. Davidson, A.K. Goodwin, E.O. Fielder, W.S. Buckler, and N.P. Steinsberger, 2002, Intergrating fracture mapping technologies to optimize stimulations in the Barnett Shale: Society of Petroleum Engineers, SPE Paper 7441, 11 p.

Fisher, Q., P. Lorinczi, C. Grattoni, K. Rybalcenko, A.J. Cook, S. Allshorn, A.D. Burns, and I. Shafagh, 2017, Laboratory characterization of the porosity and permeability of gas shales using the crushed shale method: Insights from experiments and numerical modelling: Marine and Petroleum Geology, v. 86, p. 95-110.

Fishman, N.S., T.M. Parris, D.L. Hall, P.G. Lillis, and M.J. Pawlewicz, 2008, Origin, conditions, and timing of gas generation in the Lewis Shale, San Juan Basin, New Mexico, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 85-117.

Fishman, N.S., C.E. Turner, F. Peterson, T.S. Dyman, and T. Cook, 2008, Geologic controls on the growth of petroleum reserves: U.S. Geological Survey Bulletin 2172-I, 53 p. (Barnett Shale, p. 46-47) <http://pubs.usgs.gov/bul/b2172-i/pdf/B2172-I.pdf>

Fishman, N.S., P.C. Hackley, H.A. Lowers, R.J. Hill, S.O. Evenhoff, D.D. Eberl, and A.E. Blum, 2012, The nature of porosity in organic-rich mudstones of the Upper Jurassic Kimmeridge Clay Formation, North Sea, offshore United Kingdom: International Journal of Coal Geology, v. 103, p. 32-50.

Fishman, N.S., J.L. Ridgley, D.K. Higley, M.L.W. Tuttle, and D.L. Hall, 2012, Ancient microbial gas in the Upper Cretaceous Milk River Formation, Alberta and Saskatchewan: A large continuous accumulation in fine-grained rocks, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 258-289.

Fishman, N.S., G.S. Ellis, S.T. Paxton, A.R. Boehlke, and S.O. Egenhoff, 2013, Gas storage in the Upper Devonian–Lower Mississippian Woodford Shale, Arbuckle Mountains, Oklahoma: How much of a role do chert beds play?, in J.-Y. Chatellier and D.M. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 81-107.

Fontaine, J., N. Johnson, and D. Schoen, 2008, Design, execution, and evaluation of a “typical” Marcellus Shale slickwater stimulation: a case history: SPE-117772.

Forde, S., 2016, Cana-Woodford resilience: Oil and Gas Investor, v. 36, no. 1.

Forrest, M., 2011, Three-D seismic will have long-term economic value in shale plays: Hart Energy Publishing, E&P, v. 84, no. 12, p. 34, 36.

Foster, J., 2015, Frack 2.0: New approaches to completions in unconventionals: Hart Energy Publishing, E&P, v. 88, no. 5, p. 144.

Foster, J.M., and R.L. Graham, 1992, Exploration-production studies of newly drilled Devonian shale gas wells: Des Plaines, Illinois, Gas Technology Institute, GRI-92/0297, 125 p.

Foster, R., 2007, ‘HFM’ enhances performance: Hart Energy Publishing, E&P, v. 80, no. 3, p. 81-82.

Francis, D., 2014, Advances made in shale-specific geology and geophysics: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-67 to S-72.

Francis, D., 2014, Water management tools and techniques continue to expand: Shale Technology Review, supplement to World Oil, v. 235, no. 7, p. S-143 to S-148.

Francis, D., 2016, Forget refracs: World Oil, v. 237, no. 3, p. 19.

Frantz, J.H., Jr., 1995, Technology applications improve Antrim Shale well recoveries and economics: GRI GasTIPS, v. 2, no. 1, p. 5-11.

Frantz, J.H., Jr., and C.W. Hopkins, 1996, Advances in hydraulic fracturing technology in the Antrim Shale: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0401.1, 132 p.

Frantz, J.H., Jr., G.A. Waters, and V.A. Jochen, 2005, Operators re-discover shale gas value: Hart Energy Publishing, E&P, v. 78, no. 10, p. 11-15.

Frantz, J.H., Jr., and V. Jochen, 2005, Shale gas: Schlumberger shale gas white paper, 9 p. (<http://www.slb.com/media/services/solutions/reservoir/shale_gas.pdf>?)

Frantz, J.H., Jr., J.R. Williamson, W.K. Sawyer, D. Johnston, G. Waters, L.P. Moore, R.J. MacDonald, M. Pearcy, S.V. Ganpule, and K.S. March, 2008, Evaluating Barnett Shale production performance using an integrated approach (reprint), in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 200-228.

Frébourg, G., S.C. Ruppel, and H. Rowe, 2013, Sedimentology of the Haynesville (upper Kimmeridgian) and Bossier (Tithonian) Formations, in the western Haynesville Basin, Texas, U.S.A., in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 47-67.

Frébourg, G., S.C. Ruppel, R.G. Loucks, and J. Lambert, 2016, Depositional controls on sediment body architecture in the Eagle Ford/Boquillas system: Insights from outcrops in west Texas, United States: AAPG Bulletin, v. 100, p. 657-682.

Freeman, D., 2012, Shale play revives San Juan Basin; ‘Science wells’ get to the core of the matter: AAPG Explorer, v. 33, no. 8, p. 16, 18. <http://www.aapg.org/explorer/2012/08aug/sanjuan0812.cfm>

Friedemann, C., 2015, What’s lurking in your basement?: Hart Energy Publishing, E&P, v. 88, no. 1, p. 54-55.

Friedman, B., 2008, Canada research initiative launched; future to be ‘unconventional’: AAPG Explorer, v. 29, no. 3, p. 36. <http://www.aapg.org/explorer/2008/03mar/canadian.cfm>

Friedman, B., 2018, Shale gas in the UK: AAPG Explorer, v. 39, no. 2, p. 8. <https://explorer.aapg.org/story/articleid/44927/shale-gas-in-the-uk>

Freitag, H.-C., 2015, Next wave of unconventional development: Hart Energy Publishing, E&P, v. 88, no. 5, p. 23. (refracturing)

Frost, J.K., 1996, Geochemistry of black shales of the New Albany Group (Devonian-Mississippian) in the Illinois Basin: relationship between lithofacies and the carbon, sulfur, and iron contents: Illinois State Geological Survey, Circular 557, 24 p. [http://www.isgs.uiuc.edu/sections/oil-gas/Circulars/Cir557\_Geochemistry\_of\_Black%20Shales\_of\_the\_New\_Albany\_Group\_(Devonian-Mississippian)\_in\_the\_Illinois\_Basin.pdf](http://www.isgs.uiuc.edu/sections/oil-gas/Circulars/Cir557_Geochemistry_of_Black%20Shales_of_the_New_Albany_Group_%28Devonian-Mississippian%29_in_the_Illinois_Basin.pdf)

Fu, H., X. Wang, L. Zhang, R. Gao, Z. Li, T. Xu, X. Zhu, W. Xu, and Q. Li, 2015, Investigation of the factors that control the development of pore structure in lacustrine shale: A case study of block X in the Ordos Basin, China: Journal of Natural Gas Science and Engineering, v. 26, p. 1422-1432.

Fu, Q., S.C. Horvath, E.C. Potter, F. Roberts, S.W. Tinker, S. Ikonnikova, W.L. Fisher, and J. Yan, 2015, Log-derived thickness and porosity of the Barnett Shale, Fort Worth Basin, Texas: Implications for assessment of gas shale resources: AAPG Bulletin, v. 99, p. 119-141.

Fu, Y., and H. Dehghanpour, 2020, How far can hydraulic fractures go? A comparative analysis of water flowback, tracer, and microseismic data from the Horn River Basin: Marine and Petroleum Geology, v. 115, 104259.

Furmann, A., M. Mastalerz, A. Schimmelmann, P.K. Pedersen, and D. Bish, 2014, Relationships between porosity, organic matter, and mineral matter in mature organic-rich marine mudstones of the Belle Fourche and Second White Specks formations in Alberta, Canada: Marine and Petroleum Geology, v. 54, p. 65-81.

Furmann, A., M. Mastalerz, S.C. Brassell, P.K. Pedersen, N.A. Zajac, and A. Schimmelmann, 2015, Organic matter geochemistry and petrography of Late Cretaceous (Cenomanian-Turonian) organic-rich shales from the Belle Fourche and Second White Specks formations, west-central Alberta, Canada: Organic Geochemistry, v. 85, p. 102-120.

Furmann, A., M. Mastalerz, D. Bish, A. Schimmelmann, and P.K. Pedersen, 2016, Porosity and pore size distribution in mudrocks from the Belle Fourche and Second White Specks Formations in Alberta, Canada: AAPG Bulletin, v. 100, p. 1265-1288.

Gai, H., X. Xiao, P. Cheng, H. Tian, and J. Fu, 2015, Gas generation of shale organic matter with different contents of residual oil based on a pyrolysis experiment: Organic Geochemistry, v. 78, p. 69-78.

Gai, H., H. Tian, and X. Xiao, 2018, Late gas generation potential for different types of shale source rocks: Implications from pyrolysis experiments: International Journal of Coal Geology, v. 193, p. 16-29.

Gale, J.F.W., R.M. Reed, and J. Holder, 2007, Natural fractures in the Barnett Shale and their importance for hydraulic fracture treatments: AAPG Bulletin, v. 91, p. 603-622.

Gale, J.F.W., and S.E. Laubach, 2009, Natural fractures in the New Albany Shale and their importance for shale-gas production: 2009 International Coalbed & Shale Gas Symposium, Tuscaloosa, AL, Paper 0916.

Gale, J.F.W., and J. Holder, 2010, Natural fractures in some US shales and their importance for gas production, 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. 1131-1140.

Gale, J.F.W., S.E. Laubach, J.E. Olson, P. Eichhubl, and A. Fall, 2014, Natural fractures in shale: A review and new observations: AAPG Bulletin, v. 98, p. 2165-2216.

Gallagher, C., 2013, Approach improves water usage, cost: American Oil & Gas Reporter, v. 56, no. 8, p. 93-96.

Gamero-Diaz, H., C. Miller, and R. Lewis, 2012, sCore: A classification scheme for organic mudstones based on bulk mineralogy: AAPG Search and Discovery Article #40951, 18 p.

Gamero-Diaz, H., C. Miller, R. Lewis, and C. Contreras Fuentes, 2013, Evaluating the impact of mineralogy on reservoir quality and completion quality of organic shale plays: AAPG Search and Discovery Article 41221, 5 p. <http://www.searchanddiscovery.com/documents/2013/41221diaz/ndx_diaz.pdf>

Gao, B., 2016, Geochemical characteristics and geological significance of shale gas from the Lower Silurian Longmaxi Formation in Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 119-129.

Gao, F., Y. Song, Z. Li, Z. Jiang, Z. Gao, X. Zhang, L. Chen, and Q. Liu, 2018, Pore characteristics and dominant controlling factors of overmature shales: A case study of the Wangyinpu and Guanyintang Formations in the Jiangxi Xiuwu Basin: Interpretation, v. 6, no. 2, p. T393-T412.

Gao, F., Y. Song, Z. Li, F. Xiong, L. Chen, X. Zhang, Z. Chen, and J. Moortgat, 2018, Quantitative characterization of pore connectivity using NMR and MIP: A case study of the Wangyinpu and Guanyintang shales in the Xiuwu basin, southern China: International Journal of Coal Geology, v. 197, p. 53-65.

Gao, F., Y. Song, Z. Li, F. Xiong, L. Chen, Y. Zhang, Z. Liang, X. Zhang, Z. Chen, and M. Joachim, 2018, Lithofacies and reservoir characteristics of the Lower Cretaceous continental Shahezi Shale in the Changling Fault Depression of Songliao Basin, NE China: Marine and Petroleum Geology, v. 98, p. 401-421.

Gao, G., A. Titi, S. Yang, Y. Tang, Y. Kong, and W. He, 2017, Geochemistry and depositional environment of fresh lacustrine source rock: A case study from the Triassic Baijiantan Formation shales in Junggar Basin, northwest China: Organic Geochemistry, v. 113, p. 75-89.

Gao, J., S. He, J.-X. Zhao, and J. Yi, 2017, Geothermometry and geobarometry of overpressured lower Paleozoic gas shales in the Jiaoshiba field, central China: Insight from fluid inclusions in fracture cements: Marine and Petroleum Geology, v. 83, p. 124-139.

Gao, J., J.-K. Zhang, S. He, J.-X. Zhao, Z.-L. He, Y.-J. Wo, Y.-X. Feng, and W. Li, 2019, Overpressure generation and evolution in Lower Paleozoic gas shales of the Jiaoshiba region, China: Implications for shale gas accumulation: Marine and Petroleum Geology, v. 102, p. 844-859.

Gao, L., S.C. Brassell, M. Mastalerz, and A. Schimmelmann, 2013, Microbial degradation of sedimentary organic matter associated with shale gas and coalbed methane in eastern Illinois Basin (Indiana), USA: International Journal of Coal Geology, v. 107, p. 152-164.

Gao, L., S. Wu, A. Deev, R. Olson, F. Mosca, S. Zhang, Y. Ni, Q. Qu, R. LaFollette, G. Chen, and Y. Tang, 2017, The gas isotope interpretation tool: A novel method to better predict production decline: AAPG Bulletin, v. 101, p. 1263-1275. (Barnett Shale)

Gao, Z., and Q. Hu, 2016, Wettability of Mississippian Barnett Shale samples at different depths: Investigations from directional spontaneous imbibition: AAPG Bulletin, v. 100, p. 101-114.

Gao, Z., and Q. Hu, 2018, Pore structure and spontaneous imbibition characteristics of marine and continental shales in China: AAPG Bulletin, v. 102, p. 1941-1961.

Gao, Z., X. Yang, C. Hu, L. Wei, Z. Jiang, S. Yang, Y. Fan, Z. Xue, and H. Yu, 2019, Characterizing the pore structure of low permeability Eocene Liushagang Formation reservoir rocks from Beibuwan Basin in northern South China Sea: Marine and Petroleum Geology, v. 99, p. 107-121.

Gao, Z., Y. Fan, Q. Hu, Z. Jiang, and Y. Cheng, 2020, The effects of pore structure on wettability and methane adsorption capability of Longmaxi Formation shale from the southern Sichuan Basin in China: AAPG Bulletin, v. 104, p. 1375-1399.

Gao, Z., Y. Fan, Q. Xuan, and G. Zheng, 2020, A review of shale pore structure evolution characteristics with increasing thermal maturities: Advances in Geo-Energy Research, v. 4, p. 247-259.

Gao, Z., B. Li, Y. Zhang, C. Ren, and B. Wang, 2020, Study on the adsorption and thermodynamic characteristics of methane under high temperature and pressure: Energy Fuels, v. 34, p. 15, 878-15,893.

Garrison, J., 2013, Appalachian shales: economics: The Appalachian Basin continues to attract operators, in Appalachian shales playbook: Houston, Hart Energy Publishing, p. 90-95.

Garrison, J., 2014, The beast from the east: Industry targets Marcellus: Oil and Gas Investor, v. 34, no. 5, p. 23. (valuation map identifies sweet spots)

Garrison, J., 2014, Operators expand Utica horizons: Oil and Gas Investor, v. 34, no. 6, p. 17. (valuation map identifies sweet spots)

Garrison, J., 2014, TMS: A future light, tight oil play, in Tuscaloosa Marine Shale playbook: Houston, Hart Energy Publishing, p. 38-42.

Garrison, J., 2015, Updated reserves for the Utica Shale: Oil and Gas Investor, v. 35, no. 9, p. 19.

Garrison, J., and S. Crabtree, 2015, The Marcellus and Utica: Why do they matter?, in Marcellus-Utica shales playbook: Houston, Hart Energy Publishing, p. 50-56.

Garrison, J., 2016, Argentina holds vast shale resources: Hart Energy Publishing, E&P, v. 89, no. 1, p. 96.

Garvin, J., 2015, The search for new exploration plays: When only the best will do: AAPG Search and Discovery Article #10810, 29 p.

Gasparik, M., P. Bertier, Y. Gensterblum, A. Ghanizadeh, B.M. Krooss, and R. Littke, 2014, Geological controls on the methane storage capacity in organic-rich shales: International Journal of Coal Geology, v. 123, p. 34-51.

Garsparik, M., T.F.T. Rexer, A.C. Aplin, P. Billemont, G.De Weireld, Y. Gensterblum, M. Henry, B.M. Krooss, S. Liu, X. Ma, R. Sakurovs, Z. Song, G. Staib, K.M. Thomas, S. Wang, and T. Zhang, 2014, First international inter-laboratory comparison of high-pressure CH4, CO2 and C2H6 sorption isotherms on carbonaceous shales: International Journal of Coal Geology, v. 132, p. 131-146.

Garum, M., P.W.J. Glover, P. Lorinczi, G. Scott, and A. Hassanpour, 2021, Ultrahigh-resolution 3D imaging for quantifying the pore nanostructure of shale and predicting gas transport: Energy Fuels, v. 35, p. 702-717.

Gasparrini, M., W. Sassi, and J.F.W. Gale, 2014, Natural sealed fractures in mudrocks: A case study tied to burial history from the Barnett Shale, Fort Worth Basin, Texas, USA: Marine and Petroleum Geology, v. 55, p. 122-141.

Gasparrini, M., O. Lacombe, S. Rohais, M. Belkacemi, and T. Euzen, 2021, Natural mineralized fractures from the Montney-Doig unconventional reservoirs (Western Canada Sedimentary Basin): Timing and controlling factors: Marine and Petroleum Geology, v. 124, 104826.

Gaudlip, A.W., and L.O. Paugh, 2008, Marcellus Shale water management challenges in Pennsylvania: SPE-110909.

Gaus, G., R. Fink, A. Amann-Hildenbrand, B.M. Krooss, and R. Littke, 2021, Experimental determination of porosity and methane sorption capacity of organic-rich shales as a function of effective stress: Implications for gas storage capacity: AAPG Bulletin, v. 105, p. 309-328.

Gautier, D.L., J.K. Pitman, R.R. Charpentier, T. Cook, T.R. Klett, and C.J. Schenk, 2012, Potential for technically recoverable unconventional gas and oil resources in the Polish-Ukrainian Foredeep, Poland, 2012: U.S. Geological Survey Fact Sheet 2012–3102, 2 p. <http://pubs.usgs.gov/fs/2012/3102/>

Gault, B., and G. Stotts, 2007, Improve shale gas production forecasts: Hart Energy Publishing, E&P, v. 80, no. 3, p. 85-87.

Gautier, D.L., 2012, Strategy for assessment of European gas shales: AAPG Search and Discovery Article #80208, 37 p.

Gautier, D.L., R.R. Charpentier, S.B. Gaswirth, T.R. Klett, J.K. Pitman, C.J. Schenk, M.E. Tennyson, and K.J. Whidden, 2013, Undiscovered gas resources in the Alum Shale, Denmark, 2013: U.S. Geological Survey, Fact Sheet 2013-3103, 4 p. <http://pubs.usgs.gov/fs/2013/3103/pdf/fs2013-3103.pdf>

Ge, T., J. Pan, K. Wang, W. Liu, P. Mou, and X. Wang, 2020, Heterogeneity of pore structure of late Paleozoic transitional facies coal-bearing shale in the southern North China and its main controlling factors: Marine and Petroleum Geology, v. 122, 104710.

Ge, X., C. Mou, Q. Yu, W. Liu, X. Men, and J. He, 2019, The geochemistry of the sedimentary rocks from the Huadi No. 1 well in the Wufeng-Longmaxi formations (Upper Ordovician-Lower Silurian), South China, with implications for paleoweathering, provenance, tectonic setting and paleoclimate: Marine and Petroleum Geology, v. 103, p. 646-660.

Ge, X., W. Hu, Y. Ma, M. Li, J. Tang, and P. Zhao, 2021, Quantitative evaluation of geological conditions for shale gas preservation based on vertical and lateral constraints in the Songkan area, northern Guizhou, southern China: Marine and Petroleum Geology, v. 124, 104787.

Gensterblum, Y., A. Ghanizadeh, R.J. Cuss, A. Amann-Hildenbrand, B.M. Krooss, C.R. Clarkson, J.F. Harrington, and M.D. Zoback, 2015, Gas transport and storage capacity in shale gas reservoirs — A review. Part A: Transport processes: Journal of Unconventional Oil and Gas Resources, v. 12, p. 87-122.

Gentzis, T., 2013, A review of the thermal maturity and hydrocarbon potential of the Mancos and Lewis shales in parts of New Mexico, USA: International Journal of Coal Geology, v. 113, p. 64-75.

Gentzis, T., H. Carvajal-Ortiz, S.G. Ocubalidet, and B. Wawak, 2017, Organic petrology characteristics of selected shale oil and shale gas reservoirs in the USA: Examples from “The Magnificent Nine”, in I. Suárez-Ruiz, and J.G. Mendonça Filho, eds., The role of organic petrology in the exploration of conventional and unconventional hydrocarbon systems: Sharjah, U.A.E., Bentham Science Publishers, p. 131-168.

Gerdom, D., J. Caplan, I.J. Terry, Jr., K. Wutherich, E. Wigger, and K. Walker, 2013, Geomechanics key in Marcellus wells: American Oil & Gas Reporter, v. 56, no. 3, p. 84-91.

Ghanbari, E., and H. Dehghanpour, 2015, Impact of rock fabric on water imbibition and salt diffusion in gas shales: International Journal of Coal Geology, v. 138, p. 55-67.

Ghanbari, E., and H. Dehghanpour, 2015, The fate of fracturing water: A field and simulation study: Fuel, v. 163, p. 282-294.

Ghanizadeh, A., A. Amann-Hildenbrand, M. Gasparik, Y. Gensterblum, B.M. Krooss, and R. Littke, 2014, Experimental study of fluid transport processes in the matrix system of the European organic-rich shales: II. Posidonia Shale (Lower Toarcian, northern Germany): International Journal of Coal Geology, v. 123, p. 20-33.

Ghanizadeh, A., C.R. Clarkson, S. Aquino, and A. Vahedian, 2017, Permeability standards for tight rocks: Design, manufacture and validation: Fuel, v. 197, p. 121-137.

Ghazwani, A., R. Littke, G. Gaus, and C. Hartkopf-Fröder, 2018, Assessment of unconventional shale gas potential of organic-rich Mississippian and Lower Pennsylvanian sediments in western Germany: International Journal of Coal Geology, v. 198, p. 29-47.

Ghiselin, D., 2009, The Haynesville heats up: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 70-81.

Ghiselin, D., 2009, Technology rules Arkoma successes: Houston, Hart Energy Publishing, Arkoma playbook, p. 38-45.

Ghiselin, D., 2009, Technology + experience: a winning combination: Houston, Hart Energy Publishing, Marcellus Playbook, p. 68-77.

Ghiselin, D., 2009, The ‘sleeping giant’ awakens: Houston, Hart Energy Publishing, Barnett Playbook, p. 44-55.

Ghiselin, D., 2010, Production is the name of the game: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 45-55.

Ghiselin, D., 2010, Serendipity is alive and well at Eagle Ford: Hart Energy Publishing, E&P, v. 83, no. 12, p. 33.

Ghiselin, D., 2011, In unconventional plays timing is everything: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 136-143.

Gholami, R., V. Rasouli, M. Sarmadivaleh, V. Minaeian, and N. Fakhari, 2016, Brittleness of gas shale reservoirs: A case study from the north Perth Basin, Australia: Journal of Natural Gas Science and Engineering, v. 33, p. 1244-1259.

Gilleland, K., 2014, US unconventional development sets standards, records, in 2014 US Unconventional yearbook: Houston, Hart Energy Publishing, p. 24-99.

Gilman, J., and C. Robinson, 2011, Success and failure in shale gas exploration and development: Attributes that make the difference: AAPG Search and Discovery Article #80132, 31 p. <http://www.searchanddiscovery.com/documents/2011/80132gilman/ndx_gilman.pdf>

Gilmer, A., 2013, Exploration activity heating up around globe in unconventional plays: American Oil & Gas Reporter, v. 56, no. 4, p. 48-57.

Gilmour, D., 2010, 3-D modeling optimizes well placement: American Oil & Gas Reporter, v. 53, no. 7, p. 83-87.

Ginsberg, S., 2011, Programs are defense against federal regulation of hydraulic fracturing: American Oil & Gas Reporter, v. 54, no. 7, p. 29.

Ginsberg, S., 2011, U.S. Forest Service joins others in attacking hydraulic fracturing: American Oil & Gas Reporter, v. 54, no. 9, p. 31.

Ginsberg, S., 2011, Standardized BMPs for producing shale gas need more thought: American Oil & Gas Reporter, v. 54, no. 10, p. 33.

Ginsberg, S., 2012, EPA considers rule for shale gas and CBM water discharges: American Oil & Gas Reporter, v. 55, no. 1, p. 27.

Ginsberg, S., 2013, Anti-fracturing mania reaches to the heart of Texas’ Barnett Shale: American Oil & Gas Reporter, v. 56, no. 10, p. 29.

Glorioso, J.C., and A. Rattia, 2012, Unconventional reservoirs: Basic petrophysical concepts for shale gas: SPE Paper 153004, 38 p.

Goddard, D.A., E.A. Mancini, M. Horn, and S.C. Talukdar, 2008, Hydrocarbon generating potential: Jurassic Cotton Valley–Bossier Group, north Louisiana Salt Basin: Gulf Coast Association of Geological Societies Transaction, v. 58, p. 305-325. (Haynesville Shale)

Godec, M., T. Van Leeuwen, and V.A. Kuuskraa, 2007, Unconventional gas—5. Rising drilling, stimulation costs pressure economics: Oil & Gas Journal, v. 105.39, p. 45-51.

Goergen, E.T., K. Skinner, H. Lemmens, and A. Benidictus, 2014, From core to pore: Multi-scale, multi-dimensional characterization of fine-grained reservoir rocks: AAPG Search and Discovery Article #41358, 7 p. <http://www.searchanddiscovery.com/documents/2014/41358goergen/ndx_goergen.pdf>

Golding, S.D., C.J. Boreham, and J.S. Esterle, 2013, Stable isotope geochemistry of coal bed and shale gas and related production waters: A review: International Journal of Coal Geology, v. 120, p. 24-40.

Goldwood, D., S. Bainum, and T. Dunnahoe, 2010, Friction reduction polymer aids slickwater fracs in the Haynesville: Hart Energy Publishing, E&P, v. 83, no. 8, p. 62-63.

Gonciaruk, A., M.R. Hall, M.W. Fay, C.D.J. Parmenter, C.H. Vane, A.N. Khlobystov, and N. Ripepi, 2021, Kerogen nanoscale structure and CO2 adsorption in shale micropores: Scientific Reports, v. 11, 3920.

Gong, D., Y. Song, Y. Wei, C. Liu, Y. Wu, L. Zhang, and H. Cui, 2019, Geochemical characteristics of Carboniferous coaly source rocks and natural gases in the southeastern Junggar Basin, NW China: Implications for new hydrocarbon exploration: International Journal of Coal Geology, v. 202, p. 171-189.

Gonzalez, R., 2003, A GIS approach to the geology, production and growth of the Barnett Shale play in Newark East field: University of Texas at Dallas, unpublished M.S. thesis, POEC 6386.

Gonzalez, R., 2005, A GIS approach to the geology, production, and growth of the Barnett Shale play in Newark East Field, north Texas: AAPG Search and Discovery, article #40147, 24 p. (<http://www.searchanddiscovery.com/documents/2005/gonzalez/index.htm>)

Gonzalez Canro, A.A., 2010, Application of cluster analysis to facies identification and correlation in the Barnett Shale, Johnson County, Fort Worth Basin, Texas: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 128 p.

Goodway, W., 2010, Need to ‘create’ reservoirs propels geophysical advances in unconventional resource plays: American Oil & Gas Reporter, v. 53, no. 1, p. 74-80.

Goodwin, S., S. Higgins, T. Bratton, A. Donald, G. Tracy, and F. Yuen, 2010, Anisotropy key for Baxter Shale wells: American Oil & Gas Reporter,v. 53, no. 11, p. 99-103. (stress anisotropy)

Goral, J., I. Miskovic, J. Gelb, and M. Marsh, 2016, Correlative X-ray and electron microscopy for multi-scale characterization of heterogeneous shale reservoir pore systems, in T. Olson, ed., Imaging unconventional reservoir pore systems: AAPG Memoir 112, p. 77-88.

Goral, J., I. Walton, M. Andrew, and M. Deo, 2019, Pore system characterization of organic-rich shales using nanoscale-resolution 3D imaging: Fuel, v. 258, 116049.

Goral, J., M. Andrew, T. Olson, and M. Deo, 2020, Correlative core- to pore-scale imaging of shales: Marine and Petroleum Geology, v. 111, p. 886-904. (Mancos Shale)

Gorbanenko, O.O., and B. Ligouis, 2014, Changes in optical properties of liptinite macerals from early mature to post mature stage in Posidonia Shale (Lower Toarcian, NW Germany): International Journal of Coal Geology, v. 133, p. 47-59.

Grabowski, G.J., Jr., 1995, Organic-rich chalks and calcareous mudstones of the Upper Cretaceous Austin Chalk and Eagleford Formation, south-central Texas, USA, in B.J. Katz, ed., Petroleum source rocks: New York, Springer-Verlag, p. 209-234.

Grana, D., K. Schlanser, and E. Campbell-Stone, 2015, Petroelastic and geomechanical classification of lithologic facies in the Marcellus Shale: Interpretation, v. 3, no. 1, p. SA51-SA63.

Gray, D.A., 2011, Using casing annular packers to prevent shallow gas migration to surface in shale wells: World Oil, v. 232, no. 12, p. 43-45.

Green, H., B. Šegvić, G. Zanoni, S. Omodeo-Salé, and T. Adatte, 2020, Evaluation of shale source rocks and clay mineral diagenesis in the Permian Basin, USA: Inferences on basin thermal maturity and source rock potential: Geosciences, v. 10, 381.

Green, J.A., 2012, Geochemical investigation of the basal Barnett Shale: Stillwater, OK, Oklahoma State University, unpublished M.S. thesis.

Green, R.E., 2014, Global, risk-based shale development verification service launches: Hart Energy Publishing, E&P, v. 87, no. 6, p. 54, 56.

Greenberg, J., 2011, Facilitating success: Houston, Hart Energy Publishing, Eagle Ford Shale 2011 Playbook, p. 54-74.

Greenberg, J., 2011, Servicing the Marcellus Shale: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 58-75.

Greenberg, J., 2012, The fledgling Utica, in Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, p. 62-76.

Greenberg, J., 2013, So many shales, so little drilling, in Global unconventional yearbook: Houston, Hart Energy Publishing, p. 116-145.

GRI, 1991, Devonian gas shale bibliography: Des Plaines, Illinois, Gas Technology Institute, GRI-91/0206, 17 p.

GRI, 1991, Gas Research Institute Devonian (Ohio) gas shales workshop, Charleston, WV, Marietta, OH, Pittsburgh, PA, May 1991: Des Plaines, Illinois, Gas Technology Institute, GRI-91/0462, 420 p.

GRI, 1992, Gas Research Institute gas shales program bibliography: Des Plaines, Illinois, Gas Technology Institute, GRI-92/0168, 22 p.

GRI, 1992, Gas potential of the New Albany Shale (Devonian and Mississippian) in the Illinois Basin: Des Plaines, Illinois, Gas Technology Institute, GRI-92/0391.

GRI, 1992, Presentations from the Charleston gas shales workshop with special emphasis on the combined Berea Sands: Des Plaines, Illinois, Gas Technology Institute, GRI-92/0578, 354 p.

GRI, 1993, Antrim Shale workshop, Mt. Pleasant, Michigan, December 14, 1993: Des Plaines, Illinois, Gas Technology Institute, GRI-93/0485, 296 p.

GRI, 1996, Workshop on gas potential of New Albany Shale held in conjunction with the 1995 IOGA meeting: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0488, 300 p.

GRI, 2000, United States fractured shale gas resource map: GRI GasTIPS map.

GRI, 2000, GIS compilation of gas potential of the New Albany Shale in the Illinois Basin: Des Plaines, Illinois, Gas Technology Institute, GRI-00/0068, CD-ROM.

Grieve, P.L., S.A. Hynek, V. Heilweil, T. Sowers, G. Llewellyn, D. Yoxtheimer, D.K. Solomon, and S.L. Brantley, 2018, Using environmental tracers and modelling to identify natural and gas well-induced emissions of methane into streams: Applied Geochemistry, v. 91, p. 107-121.

Gross, D., R.F. Sachsenhofer, A. Bechtel, L. Pytlak, B. Rupprecht, and E. Wegerer, 2015, Organic geochemistry of Mississippian shales (Bowland Shale Formation) in central Britain: Implications for depositional environment, source rock and gas shale potential: Marine and Petroleum Geology, v. 59, p. 1-21.

Gruber, S., 2012, Technology aids fracturing success: Hart Energy Publishing, E&P, v. 85, no. 7, p. 8, 10.

Gu, X., D.R. Cole, G. Rother, D.F.R. Mildner, and S.L. Brantley, 2015, Pores in Marcellus Shale: a neutron scattering and FIB-SEM study: Energy & Fuels, v. 29, p. 1295-1308.

Gu, Y., W. Ding, M. Yin, R. Wang, B. Jiao, G. Zhao, and L. Lu, 2018, Investigation of the methane adsorption characteristics of marine organic-rich shale: A case study of the lower Cambrian Niutitang Shale in the Fenggang block, northern Guizhou Province, south China: Interpretation, v. 6, no. 4, p. T819-T833.

Guan, Q., X. Lű, D. Dong, and X. Cai, 2019, Origin and significance of organic-matter pores in Upper Ordovician Wufeng-Lower Silurian Longmaxi mudstones, Sichuan Basin: Journal of Petroleum Science and Engineering, v. 176, p. 554-561.

Guest, A., E. Rebel, S. Bailly, and J. Kostadinovic, 2015, Study analyzes microseismic activity: American Oil & Gas Reporter, v. 58, no. 1, p. 101-105.

Guest, A., S. Voisey, and G. Castillo, 2015, Seismic-based production forecastling for shale plays: AAPG Search and Discovery Article #120186, 6 p. <http://www.searchanddiscovery.com/documents/2015/120186guest/ndx_guest.pdf>

Guidry, F.K., D.L. Luffel, and J.B. Curtis, 1995, Development of laboratory and petrophysical techniques for evaluating shale reservoirs: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0496, 304 p.

Gunther, M.J., 2017, Estimating brittleness using seismic data in an unconventional shale reservoir, Fort Worth Basin, north central Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 79 p. (Barnett Shale)

Guo, C., J. Xu, K. Wu, M. Wei, and S. Liu, 2015, Study on gas flow through nano pores of shale gas reservoirs: Fuel, v. 143, p. 107-117.

Guo, H., W. Jia, P. Peng, J. Zeng, and R. He, 2017, Evolution of organic matter and nanometer-scale pores in an artificially matured shale undergoing two distinct types of pyrolysis: A study of the Yanchang Shale with Type II kerogen: Organic Geochemistry, v. 105, p. 56-66.

Guo, T., S. Zhang, Z. Qu, T. Zhou, Y. Xiao, and J. Gao, 2014, Experimental study of hydraulic fracturing for shale by stimulated reservoir volume: Fuel, v. 128, p. 373-380.

Guo, T., S. Zhang, H. Ge, X. Wang, X. Lei, and B. Xiao, 2014, A new method for evaluation of fracture network formation capacity of rock: Fuel, v. 140, p. 778-787.

Guo, T., 2015, The Fuling shale gas field — A highly productive Silurian gas shale with high thermal maturity and complex evolution history, southeastern Sichuan Basin, China: Interpretation, v. 3, no. 2, p. SJ25-SJ34.

Guo, W., Z. Hu, X. Zhang, R. Yu, and L. Wang, 2017, Shale gas adsorption and desorption characteristics and its effects on shale permeability: Energy Exploration & Exploitation, v. 35, p. 463-481.

Guo, W., L. Zuo, R. Yu, X. Zhang, and L. Wang, 2017, Study of factors affecting shale gas adsorption by simplified local density-Peng-Robinson method: Energy Exploration & Exploitation, v. 35, p. 528-541.

Guo, X., Y. Shen, and S. He, 2015, Quantitative pore characterization and the relationship between pore distributions and organic matter in shale based on Nano-CT image analysis: A case study for a lacustrine shale reservoir in the Triassic Chang 7 member, Ordos Basin, China: Journal of Natural Gas Science and Engineering, v. 27, p. 1630-1640.

Guo, X., Z. Huang, X. Ding, J. Chen, X. Chen, and R. Wang, 2018, Characterization of continental coal-bearing shale and shale gas potential in Taibei Sag of the Turpan-Hami Basin, NW China: Energy & Fuels, v. 32, p. 9055-9069.

Guo, X., Z. Qin, R. Yang, T. Dong, S. He, F. Hao, J. Yi, Z. Shu, H. Bao, and K. Liu, 2019, Comparison of pore systems of clay-rich and silica-rich gas shales in the lower Silurian Longmaxi formation from the Jiaoshiba area in the eastern Sichuan Basin, China: Marine and Petroleum Geology, v. 101, p. 265-280.

Guo, X., Z. Qin, R. Yang, T. Dong, S. He, F. Hao, J. Yi, Z. Shu, H. Bao, and K. Liu, 2019, Comparison of pore systems of clay-rich and silica-rich gas shales in the lower Silurian Longmaxi formation from the Jiaoshiba area in the eastern Sichuan Basin, China: Marine and Petroleum Geology, v. 101, p. 265-280.

Guo, Y., 2010, Seismic attributes illumination of the Woodford Shale, Arkoma Basin, Oklahoma: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 53 p.

Guo, Y., X. Pang, D. Chen, K. Yang, Z. Jiang, X. Zhang, and F. Jiang, 2013, Evaluation of Upper Triassic T3x5 source rocks (western Sichuan Depression, Sichuan Basin) and their hydrocarbon generation and expulsion characteristics: Implication for tight-sand gas and shale gas accumulation potential assessment: Natural Resources Research, v. 22, p. 163-177.

Gupta, N., S. Sarkar, and K.J. Marfurt, 2013, Seismic attribute driven integrated characterization of the Woodford Shale in west-central Oklahoma: Interpretation, v. 1.

Gupta, N., E. Fathi, and F. Belyadi, 2018, Effects of nano-pore wall confinements on rarefied gas dynamics in organic rich shale reservoirs: Fuel, v. 220, p. 120-129.

Haas, G., 2013, Shale gas revives ammonia industry: Oil and Gas Investor, v. 33, no. 7, p. 19.

Haas, G., 2013, The British inversion: Oil and Gas Investor, v. 33, no. 9, p. 12. (Bowland Shale)

Hackley, P.C., K.O. Dennen, R.M. Gesserman, and J.L. Ridgley, 2009, Preliminary vitrinite and bitumen reflectance, total organic carbon, and pyrolysis data for samples from Upper and Lower Cretaceous strata, Maverick Basin, south Texas: U.S. Geological Survey, Open-File Report 2009-1220. (Eagle Ford Shale) <http://pubs.usgs.gov/of/2009/1220/>

Hackley, P.C., 2012, Geological and geochemical characterization of the Lower Cretaceous Pearsall Formation, Maverick Basin, south Texas: A future shale gas resource?: AAPG Bulletin, v. 96, p. 1449-1482.

Hackley, P.C., R.T. Ryder, M.H. Trippi, and H. Alimi, 2013, Thermal maturity of northern Appalachian Basin Devonian shales: Insights from sterane and terpane biomarkers: Fuel, v. 106, p. 455-462.

Hackley, P.C., B.J. Valentine, C.B. Enomoto, C.D. Lohr, K.R. Scott, F.T. Dulong, and A.M. Bove, 2014, Aptian ‘shale gas’ prospectivity in the downdip Mississippi interior Salt Basin, Gulf Coast, USA: Unconventional Resources Technology Conference, URTeC 1922696, 9 p.

Hackley, P.C., and B.J. Cardott, 2016, Application of organic petrography in North American shale petroleum systems: A review: International Journal of Coal Geology, v. 163, p. 8-51.

Hackley, P.C., 2017, Application of organic petrology in high maturity shale gas systems, in I. Suárez-Ruiz, and J.G. Mendonça Filho, eds., The role of organic petrology in the exploration of conventional and unconventional hydrocarbon systems: Sharjah, U.A.E., Bentham Science Publishers, p. 206-236.

Hackley, P.C., C.B. Enomoto, B.J. Valentine, W.A. Rouse, C.D. Lohr, F.T. Dulong, J.J. Hatcherian, S.T. Brennan, W.H. Craddock, T.M. Finn, S.B. Gaswirth, P.A. Le, H.M. Leathers-Miller, K.R. Marra, T.J. Mercier, S.T. Paxton, K.J. Whidden, C.A. Woodall, and C.J. Schenk, 2018, Assessment of undiscovered continuous oil and gas resources in the Upper Cretaceous Tuscaloosa marine shale of the U.S. Gulf Coast, 2018: U.S. Geological Survey, Fact Sheet 2018-3043, 2 p. <https://pubs.er.usgs.gov/publication/fs20183043>

Hackley, P.C., T.M. Parris, C.F. Eble, S.F. Greb, and D.C. Harris, 2021, Oil-source correlation studies in the shallow Berea Sandstone petroleum system, eastern Kentucky: AAPG Bulletin, v. 105, p. 517-542. (Sunbury Shale; Ohio Shale)

Hackley, P.C., and R.T. Ryder, 2021, Organic geochemistry and petrology of Devonian shale in eastern Ohio: Implications for petroleum systems assessment: AAPG Bulletin, v. 105, p. 543-573. (lower Huron member; Marcellus Shale; Ohio Shale)

Haddad. M., and K. Sepehmoori, 2015, Simulation of hydraulic fracturing in quasi-brittle shale formations using characterized cohesive layer: Stimulation controlling factors: Journal of Unconventional Oil and Gas Resources, v. 9, p. 65-83.

Haege, M., S. Maxwell, L. Sonneland, and M. Norton, 2014, Attribute explains fracture behavior: American Oil & Gas Reporter, v. 57, no. 3, p. 86-91. (microseismic)

Haeri-Ardakani, O., H. Sanei, D. Lavoie, Z. Chen, and C. Jiang, 2015, Geochemical and petrographic characterization of the Upper Ordovician Utica Shale, southern Quebec, Canada: International Journal of Coal Geology, v. 138, p. 83-94.

Hagemeier, P., and J. Hutt, 2009, Hydraulic fracturing, water use issues under congressional, public scrutiny: Oil & Gas Journal, v. 107.25, p. 18-23.

Haines, L., 2006, Activity builds in Woodford Shale: Supplement to Oil and Gas Investor, January 2006, p. 17. <http://www.oilandgasinvestor.com/pdf/ShaleGas.pdf>

Haines, L., 2006, Unconventional gas resources: the Woodford Shale: Oil and Gas Investor, v. 26, no. 8, p. 79-81.

Haines, L., 2006, Shale-gas producers ramping up production, rigs: Oil and Gas Investor, v. 26, no. 9, p. 33-34.

Haines, L., 2007, Shale mania: Oil and Gas Investor, v. 27, no. 6, p. 5.

Haines, L., 2007, Apache working on stealth shale-gas play in Canada: Oil and Gas Investor, v. 27, no. 10, p. 36-40.

Haines, L., 2008, Magic numbers: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 1.

Haines, L., 2008, Bakken most improved; Fayetteville leaps; Barnett may slow: Oil & Gas Investor, v. 28, no. 2, p. 37.

Haines, L., 2008, Nichols on the Barnett and Washington: Oil and Gas Investor, v. 28, no. 6, p. 61-63.

Haines, L., 2008, Land rigs gain traction: between high commodity prices and the boom in shale plays, the U.S. land-rig count has soared to a 20-year high: Oil and Gas Investor, v. 28, no. 8, p. 87-89.

Haines, L., 2008, Rigs for shale: Oil and Gas Investor, v. 28, no. 8, p. 88-89.

Haines, L., 2008, Wojahn: Horn River, Haynesville, deep Bossier hype justified: Oil and Gas Investor, v. 28, no. 9, p. 28-29.

Haines, L., 2008, Haynesville play benefiting more than E&P firms: Oil and Gas Investor, v. 28, no. 9, p. 37.

Haines, L., 2009, What’s next at Newfield: Oil and Gas Investor, v. 29, no. 9, p. 53-54. (Woodford Shale)

Haines, L., J. Maksoud, and A. Priestman, 2009, DUG–East: Marcellus shale play has vast potential: Oil and Gas Investor, v. 29, no. 12, p. 21-22.

Haines, L., 2010, ExxonMobil’s message: Oil and Gas Investor, v. 30, no. 2, p. 7.

Haines, L., 2010, Meet the Montney Shale: Oil and Gas Investor, v. 30, no. 3, p. 67-69.

Haines, L., 2010, A visit with George Mitchell: Oil and Gas Investor, v. 30, no. 11, p. 57-58.

Haines, L., 2011, Poland: Oil and Gas Investor, v. 31, no. 7, p. 38-51.

Haines, L., 2011, Thank your lucky stars: Oil and Gas Investor, v. 31, no. 11, p. 7.

Haines, L., 2012, Covering your assets: Oil and Gas Investor, v. 32, no. 3, p. 7.

Haines, L., 2012, Uinta Basin: Oil and Gas Investor, v. 32, no. 5, p. 54-64.

Haines, L., 2013, Drill or no drill: Oil and Gas Investor, v. 33, no. 7, p. 7.

Haines, L., 2013, Our thanks to George Mitchell: Oil and Gas Investor, v. 33, no. 9, p. 65-68.

Haines, L., 2013, Our thanks to George Mitchell: Hart Energy Publishing, E&P, v. 86, no. 9, p. 26, 28, 30, 32.

Haines, L., 2013, A little market research: Oil and Gas Investor, v. 33, no. 11, p. 7.

Haines, L., 2014, Tears vs. tiers: Oil and Gas Investor, v. 34, no. 8, p. 7.

Haines, L., 2015, Utica Shale bulks up: Oil and Gas Investor, v. 35, no. 6, p. 38-48.

Haines, L., 2015, Confessions of a shale junkie: Oil and Gas Investor, v. 35, no. 9, p. 7.

Haines, L., 2018, Redefining the Haynesville: Oil and Gas Investor, v. 38, no. 2, p. 34-45.

Haines, L., 2018, Advantage Marcellus: Oil and Gas Investor, v. 38, no. 4, p. 36-47.

Hair, T., H. Alsleben, M. Enderlin, and N. Donovan, 2012, Constructing a geomechanical model of the Woodford Shale, Cherokee Platform, Oklahoma, USA: Effects of confining stress and rock strength on fluid flow: AAPG Search and Discovery Article #50716, 2 p. <http://www.searchanddiscovery.com/documents/2012/50716hair/ndx_hair.pdf>

Hakami, A., and S. İnan, 2016, A basin modeling study of the Jafurah sub-basin, Saudi Arabia: Implications for unconventional hydrocarbon potential of the Jurassic Tuwaiq Mountain Formation: International Journal of Coal Geology, v. 165, p. 201-222.

Hakimi, M.H., A.S. Alaug, A.A. Lashin, I.M.J. Mohialdeen, M.M.A. Yahya, and M.M. Kinawy, 2019, Geochemical and geological modeling of the Late Jurassic Meem Shale member in the Al-Jawf sub-basin, Yemen: Implications for regional oil and gas exploration: Marine and Petroleum Geology, v. 105, p. 313-330.

Hall, D., M. Sterner, and R. Shukla, 2013, Combining advanced mud-gas and rock-fluid analysis to aid exploration and development in unconventional plays: Oklahoma City Geological Society Shale Shaker, v. 63, p. 400-409.

Hall, D., M. Sterner, and R. Shukla, 2013, Analysis aids evaluation of unconventional plays: Hart Energy Publishing, E&P, v. 86, no. 7, p. 94-96.

Hall, J.D., 2005, The Barnett Shale: An unconventional gas play in the Forth Worth Basin—Now the largest gas field in the State of Texas, in B.J. Cardott, ed., Unconventional energy resources in the southern Midcontinent, 2004 symposium: Oklahoma Geological Survey Circular 110, p. 33.

Hall, L., A.J. Hill, L. Wang, D.S. Edwards, T.J. Palu, A.J. Troup, and C.J. Boreham, 2015, Petroleum systems modelling for unconventional plays analysis in the Coooper Basin, Australia: AAPG Search and Discovery Article #10818, 20 p.

Haluszczak, L.O., A.W. Rose, and L.R. Kump, 2013, Geochemical evaluation of flowback brine from Marcellus gas wells in Pennsylvania, USA: Applied Geochemistry, v. 28, p. 55-61. (water)

Hamblin, A.P., 2006, The “shale gas” concept in Canada: a preliminary inventory of possibilities: Geological Survey of Canada, Open File 5384, 108 p. <http://gsc.nrcan.gc.ca/bookstore/circ/ofiles_e.php#5384>

Hameed, A., and R. Hemminger, 2012, Alternative conveyance techniques optimize logging in unconventionals: Hart Energy Publishing, E&P, v. 85, no. 6, p. 66, 68.

Hamlen, S., 2013, View from the UK as the shale gale begins to blow: Hart Energy Publishing, E&P, v. 86, no. 9, p. 10, 12.

Hamlen, S., 2013, China’s unconventional challenges: Hart Energy Publishing, E&P, v. 86, no. 10, p. 98, 100-101.

Hamlen, S., 2014, Slow going in China’s shales: Oil and Gas Investor, v. 34, no. 1, p. 107-108.

Hammack, R.W., W. Harbert, S. Sharma, B.W. Stewart, R.C. Capo, A.J. Wall, A. Wells, R. Diehl, D. Blaushild, J. Sams, and G. Veloski, 2014, An evaluation of fracture growth and gas/fluid migration as horizontal Marcellus Shale gas wells are hydraulically fractured in Greene County, Pennsylvania: Pittsburgh, PA, National Energy Technology Laboratory, EPAct Technical Report Series, NETL-TRS-3-2014, 76 p. <http://www.netl.doe.gov/File%20Library/Research/onsite%20research/publications/NETL-TRS-3-2014_Greene-County-Site_20140915_1_1.pdf>

Hammes, U., R. Eastwood, H.D. Rowe, and R.M. Reed, 2009, Addressing conventional parameters in unconventional shale-gas systems: depositional environment, petrography, geochemistry, and petrophysics of the Haynesville Shale, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 181-202.

Hammes, U., H.S. Hamlin, and T.E. Ewing, 2011, Geologic analysis of the Upper Jurassic Haynesville Shale in east Texas and west Louisiana: AAPG Bulletin, v. 95, p. 1643-1666.

Hammes, U., and G. Frébourg, 2012, Haynesville and Bossier mudrocks: A facies and sequence stratigraphic investigation, east Texas and Louisiana, USA: Marine and Petroleum Geology, v. 31, p. 8-26.

Hammes, U., H.-M. Schulz, M. Mutti, and M. Krause, 2012, The Permian Zechstein Formation as a potential hybrid unconventional reservoir: A sequence stratigraphic and sedimentological evaluation of organic-rich carbonates and mudrocks from shelf to basin, northern Germany: AAPG Search and Discovery Article #80238, 37 p. <http://www.searchanddiscovery.com/documents/2012/80238hammes/ndx_hammes.pdf>

Hammes, U., H.S. Hamlin, and T.E. Ewing, 2013, Geologic analysis of the Upper Jurassic Haynesville Shale in east Texas and west Louisiana: reply: AAPG Bulletin, v. 97, p. 529.

Hammes, U., and J. Gale, eds., 2013, Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, 236 p.

Hammes, U., M. Krause, and M. Mutti, 2013, Unconventional reservoir potential of the upper Permian Zechstein Group: a slope to basin sequence stratigraphic and sedimentological evaluation of carbonates and organic-rich mudrocks, northern Germany: Environmental Earth Sciences, v. 70, p. 3797-3816.

Han, C., Z. Jiang, M. Han, M. Wu, and W. Lin, 2016, The lithofacies and reservoir characteristics of the Upper Ordovician and Lower Silurian black shale in the southern Sichuan Basin and its periphery, China: Marine and Petroleum Geology, v. 75, p. 181-191.

Han, H., Y. Cao, S.-J. Chen, J.-G. Lu, C.-X. Huang, H.-H. Zhu, P. Zhan, and Y. Gao, 2016, Influence of particle size on gas-adsorption experiments of shales: An example from a Longmaxi Shale sample from the Sichuan Basin, China: Fuel, v. 186, p. 750-757.

Han, H., P. Liu, Z. Ding, P. Shi, J. Jia, W. Zhang, Y. Liu, S. Chen, J. Lu, K. Chen, X. Peng, Z. Wang, S. Xiao, and Y. Gao, 2018, The influence of extractable organic matter on pore development in the Late Triassic Chang 7 lacustrine shales, Yanchang Formation, Ordos Basin, China: Acta Geologica Sinica, v. 92, no. 4, p. 1508-1522.

Han, H., P. Pang, Z.-L. Li, P.-T. Shi, C. Guo, Y. Liu, S.-J. Chen, J.-G. Lu, and Y. Gao, 2019, Controls on organic and inorganic compositions on pore structure of lacustrine shales of Chang 7 member from Triassic Yanchang Formation in the Ordos Basin, China: Marine and Petroleum Geology, v. 100, p. 270-284.

Han, H., C. Guo, N.-N. Zhong, P. Pang, S.-J. Chen, J.-G. Lu, and Y. Gao, 2019, Pore structure evolution of lacustrine shales containing Type I organic matter from the Upper Cretaceous Qingshankou Formation, Songliao Basin, China: A study of artificial samples from hydrous pyrolysis experiments: Marine and Petroleum Geology, v. 104, p. 375-388.

Han, S., S. Bai, Z. Tang, Y. Rui, D. Gong, and J. Zhang, 2020, Nitrogen-rich gas shale logging evaluation and differential gas-bearing characterization of lower Cambrian formation in northern Guizhou, south China: Marine and Petroleum Geology, v. 115, 104270.

Han, Y., N. Mahlstedt, and B. Horsfield, 2015, The Barnett Shale: Compositional fractionation associated with intraformational petroleum migration, retention, and expulsion: AAPG Bulletin, v. 99, p. 2173-2202.

Han, Y., B. Horsfield, and D.J. Curry, 2017, Control of facies, maturation and primary migration on biomarkers in the Barnett Shale sequence in the Marathon 1 Mesquite well, Texas: Marine and Petroleum Geology, v. 85, p. 106-116.

Han, Y., B. Horsfield, R. Wirth, N. Mahlstedt, and S. Bernard, 2017, Oil retention and porosity evolution in organic-rich shales: AAPG Bulletin, v. 101, p. 807-827.

Han, Y., S. Misra, H. Wang, and E. Toumelin, 2019, Hydrocarbon saturation in a Lower-Paleozoic organic-rich shale gas formation based on Markov-chain Monte Carlo stochastic inversion of broadband electromagnetic dispersion logs: Fuel, v. 243, p. 645-658.

Han, Y., S. Poetz, N. Mahlstedt, C. Karger, and B. Horsfield, 2018, Fractionation and origin of NyOx and Ox compounds in the Barnett Shale sequence of the Marathon 1 Mesquite well, Texas: Marine and Petroleum Geology, v. 97, p. 517-524.

Han, Y., B. Ran, S. Liu, Z. Li, Y. Ye, W. Sun, D. Yang, and S. Wang, 2021, Main controlling factors of organic-matter enrichment in the Ordovician-Silurian marine organic-rich mudrock in the Yangtze Block, south China: Marine and Petroleum Geology, v. 127, 104959.

Handwerger, D.A., R. Suarez-Rivera, K.I. Vaughn, and J.F. Keller, 2012, Methods improve shale core analysis: American Oil & Gas Reporter, v. 55, no. 12, p. 80-89.

Hao, F., and H. Zou, 2013, Review article: Cause of shale gas geochemical anomalies and mechanisms for gas enrichment and depletion in high-maturity shales: Marine and Petroleum Geology, v. 44, p. 1-12.

Hao, F., H. Zou, and Y. Lu, 2013, Mechanisms of shale gas storage: Implications for shale gas exploration in China: AAPG Bulletin, v. 97, p. 1325-1346.

Hardage, B.A., 2012, Multicomponent 3-D seismic poised for future growth in fractured reservoirs: American Oil & Gas Reporter, v. 55, no. 1, p. 110-116.

Harkrider, J., and T. Mitcheli, 2014, Vertical success in Poland: Hart Energy Publishing, E&P, v. 87, no. 10, p. 90, 92.

Harper, J.A., 2008, The Marcellus Shale—An old “new” gas reservoir in Pennsylvania: Pennsylvania Geology, v. 38, no. 1, p. 2-13.

Harper, J.A., and J. Kostelnik, 2010, The Marcellus Shale play in Pennsylvania: Pennsylvania Geological Survey, 94 p. <http://www.dcnr.state.pa.us/topogeo/oilandgas/Marcellus.pdf>

Harris, N., 2009, Unconventional approach unlocks unconventional gas play: Hart Energy Publishing, E&P, v. 82, no. 9, p. 64-65. (Haynesville shale)

Harris, N.B., N.T. Hemmesch, C.A. Mnich, K. Aoudia, and J. Miskimins, 2009, An integrated geological and petrophysical study of a shale gas play: Woodford Shale, Permian Basin, west Texas: Gulf Coast Association of Geological Societies Transactions, v. 59, p. 337-346.

Harris, N.B., J.L. Miskimins, and C.A. Mnich, 2011, Mechanical anisotropy in the Woodford Shale, Permian Basin: Origin, magnitude, and scale: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 284-291.

Harrison, B., T. Oueidat, and G. Falcone, 2019, Seismic events pause Bowland shale fracturing: Oil & Gas Journal, v. 117.1, p. 55-60.

Harrison, B., T. Oueidat, and G. Falcone, 2019, Selecting an appropriate unconventional play analog for the Bowland Shale while acknowledging operational constraints in the UK: AAPG Search and Discovery Article #11252, 21 p.

Harrison, W.B., III, 2007, Shallow gas in the Michigan Basin: PTTC Network News, v. 13, no. 2, p. 10. <http://www.pttc.org/newsletter/2qtr2007/v13n2p10.htm>

Hart, B.S., J.H.S. Macquaker, and K.G. Taylor, 2013, Mudstone (“shale”) depositional and diagenetic processes: Implications for seismic analyses of source-rock reservoirs: Interpretation, v. 1, no. 1, p. B7-B26.

Hart, P., 2012, Marcellus: the shale superstar: Midstream Business, v. 3, no. 1, p. 34-41.

Hart Energy, 2009, Haynesville Shale: the playbook: Houston, Hart Energy Publishing, 88 p.

Hart Energy, 2009, Arkoma Basin playbook: Houston, Hart Energy Publishing, 64 p.

Hart Energy, 2009, Marcellus playbook: Houston, Hart Energy Publishing, 92 p.

Hart Energy, 2009, Barnett Shale playbook: Houston, Hart Energy Publishing, 76 p.

Hart Energy, 2009, Horn River playbook: Houston, Hart Energy Publishing, 48 p.

Hart Energy, 2010, Permian Basin: the playbook: Houston, Hart Energy Publishing, 84 p.

Hart Energy, 2011, Eagle Ford Shale: the 2011 playbook: Houston, Hart Energy Publishing, 108 p.

Hart Energy, 2011, Marcellus Shale: the 2011 playbook: Houston, Hart Energy Publishing, 104 p.

Hart Energy, 2012, Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, 100 p.

Hart Energy, 2012, Canada playbook: Houston, Hart Energy Publishing, 84 p.

Hart Energy, 2012, Hydraulic fracturing: the techbook: Houston, Hart Energy Publishing, 92 p.

Hart Energy, 2013, Global unconventional yearbook: Houston, Hart Energy Publishing, 216 p.

Hart Energy, 2013, Permian Basin: the 2013 playbook: Houston, Hart Energy Publishing, 108 p. (Wolfcamp, Bone Spring, and Cline)

Hart Energy, 2014, Marcellus activity continues apace: Hart Energy Publishing, E&P, v. 87, no. 4, p. 106-118.

Hart Energy, 2014, 2014 US Unconventional yearbook: Houston, Hart Energy Publishing, 204 p.

Hart Energy, 2014, Rockies tight sands and shales playbook: Houston, Hart Energy Publishing, 88 p.

Hart Energy, 2014, Utica gas production expected to grow: Hart Energy Publishing, E&P, v. 87, no. 9, p. 114-118.

Hart Energy, 2014, Tuscaloosa Marine Shale playbook: Houston, Hart Energy Publishing, 48 p.

Hart Energy, 2015, North American unconventional yearbook: Houston, Hart Energy Publishing, 204 p.

Hart Energy, 2015, Cracking the case: Hart Energy Publishing, E&P, v. 88, no. 2, p. 26-40. (several anonymous articles on hydraulic fracturing)

Hart Energy, 2015, Bakken and Niobrara shales: The playbook: Houston, Hart Energy Publishing, 100 p.

Hart Energy, 2015, Utica reserve estimates soar: Hart Energy Publishing, E&P, v. 88, no. 9, p. 120, 122.

Hart Energy, 2015, Marcellus-Utica shales playbook: Houston, Hart Energy Publishing, 60 p.

Hart Energy, 2015, Eagle Ford continues to soar: Hart Energy Publishing, E&P, v. 88, no. 12, p. 82.

Hart Energy, 2016, U.S. unconventional yearbook: Houston, Hart Energy Publishing, 156 p.

Hart Energy, 2016, Shales: a look back: Hart Energy Publishing, E&P, v. 89, no. 11, p. 26-28.

Hart Energy, 2017, Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, 84 p.

Hart Energy, 2017, SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, 52 p.

Hart Energy, 2017, Hydraulic fracturing techbook: Houston, Hart Energy Publishing, 84 p.

Hart Energy Mapping & Data Services, 2017, Marcellus, Utica poised for rebound: Hart Energy Publishing, E&P, v. 90, no. 6, p. 90-91.

Hart Energy Mapping & Data Services, 2017, Haynesville, Eagle Ford hold steady: Hart Energy Publishing, E&P, v. 90, no. 11, p. 76-77.

Hart Energy Mapping & Data Services, 2017, Appalachian region’s natural gas production on the rise: Hart Energy Publishing, E&P, v. 90, no. 12, p. 66-67. (Marcellus and Utica)

Hart Energy Mapping & Data Services, 2018, Haynesville continues its climb: Hart Energy Publishing, E&P, v. 91, no. 2, p. 80-81.

Hartwig, A., and H.-M. Schulz, 2010, Applying classical shale gas evaluation concepts to Germany—Part I: The basin and slope deposits of the Stassfurt Carbonate (Ca2, Zechstein, Upper Permian) in Brandenburg: Chemie der Erde, v. 70, p. 77-91.

Hartwig, A., S. Könitzer, B. Boucsein, B. Horsfield, and H.-M. Schulz, 2010, Applying classical shale gas evaluation concepts to Germany—Part II: Carboniferous in northeast Germany: Chemie der Erde, v. 70, p. 93-106.

Hasan, M.R., and M.T. Reza, 2019, Hydrothermal deformation of Marcellus shale: Effects of subcritical water temperature and holding time on shale porosity and surface morphology: Journal of Petroleum Science and Engineering, v. 172, p. 383-390.

Hasenmueller, N.R., 1993, New Albany Shale (Devonian and Mississippian) of the Illinois Basin, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. C1-C19.

Hasenmueller, N.R., and J.B. Comer, eds., 1994, Gas potential of the New Albany Shale (Devonian and Mississippian) in the Illinois Basin: Gas Research Institute, Final Report, Illinois Basin Studies 2, GRI-92/0391, 83 p.

Hashmy, K.H., and A. Bhatnagar, 2014, Shale reservoirs: Improved production from stimulation of sweet spots: AAPG Search and Discovery Article 41355, 36 slides. <http://www.searchanddiscovery.com/documents/2014/41355hashmy/ndx_hashmy.pdf>

Hayden, J., and D. Pursell, 2005, The Barnett Shale: Visitors guide to the hottest gas play in the US: Pickering Energy Partners, Inc., 52 p.

Hazra, B., A. K. Varma, A. K. Bandopadhyay, V.A. Mendhe, B.D. Singh, V.K. Saxena, S.K. Samad, and D.K. Mishra, 2015, Petrographic insights of organic matter conversion of Raniganj Basin shales, India: International Journal of Coal Geology, v. 150-151, p. 193-209.

Hazra, B., D.A. Wood, A.K. Varma, B.C. Sarkar, B. Tiwari, and A.K. Singh, 2018, Insights into the effects of matrix retention and inert carbon on the petroleum generation potential of Indian Gondwana shales: Marine and Petroleum Geology, v. 91, p. 125-138.

Hazra, B., D.A. Wood, V. Vishal, A.K. Varma, D. Sakha, and A.K. Singh, 2018, Porosity controls and fractal disposition of organic-rich Permian shales using low-pressure adsorption techniques: Fuel, v. 220, p. 837-848.

Hazra, B., D.A. Wood, V. Vishal, and A.K. Singh, 2018, Pore characteristics of distinct thermally mature shales: Influence of particle size on low-pressure CO2 and N2 adsorption: Energy & Fuels, v. 32, p. 8175-8186.

Hazra, B., D.A. Wood, D. Mani, P.K. Singh, and A.K. Singh, 2019, Chapter 2. Source-rock geochemistry: organic content, type, and maturity: Springer, Evaluation of shale source rocks and reservoirs, p. 7-17.

Hazra, B., D.A. Wood, D. Mani, P.K. Singh, and A.K. Singh, 2019, Chapter 7. Organic and inorganic porosity, and controls of hydrocarbon storage in shales: Springer, Evaluation of shale source rocks and reservoirs, p. 107-138.

Hazra, B., V. Vishal, and D.P. Singh, 2021, Applicability of low-pressure CO2 and N2 adsorption in determining pore attributes of organic-rich shales and coals: Energy Fuels, v. 35, p. 456-464.

He, J., J. Wang, Q. Yu, W. Liu, X. Ge, P. Yang, Z. Wang, and J. Lu, 2018, Pore structure of shale and its effects on gas storage and transmission capacity in well HD-1 eastern Sichuan Basin, China: Fuel, v. 226, p. 709-720.

Heath, C., B. Pejcic, C. Delle Piane, and L. Esteban, 2016, Development of far-infrared attenuated total reflectance spectroscopy for the mineralogical analysis of shales: Fuel, v. 182, p. 771-779.

Heidari, P., L. Li, L. Jin, J.Z. Williams, and S. L Brantley, 2017, A reactive transport model for Marcellus shale weathering: Geochimica et Cosmochimica Acta, v. 217, p. 421-440.

Hersey, A., 2014, Proppant type, additional factors impact production: Hart Energy Publishing, E&P, v. 87, no. 11, p. 58, 60.

Hester, S., 2013, Solving the shale gas peak water problem: World Oil, v. 234, no. 1, p. 87-90.

Hawker, G., 2013, To drill or not to drill?: Hart Energy Publishing, E&P, v. 86, no. 4, p. 75-76. (forecasting)

Hayden, J., and D. Pursell, 2005, The Barnett Shale: Visitors guide to the hottest gas play in the US: Pickering Energy Partners, Inc., 52 p. <http://www.tudorpickering.com/pdfs/TheBarnettShaleReport.pdf>

He, Z., Z. Hu, H. Nie, S. Li, and J. Xu, 2017, Characterization of shale gas enrichment in the Wufeng Formation-Longmaxi Formation in the Sichuan Basin of China and evaluation of its geological construction-transformation evolution sequence: Journal of Natural Gas Geoscience, v. 2, p. 1-10.

He, Z., S. Li, H. Nie, Y. Yuan, and H. Wang, 2019, The shale gas “sweet window”: “The cracked and unbroken” state of shale and its depth range: Marine and Petroleum Geology, v. 101, p. 334-342.

He, Z., H. Nie, S. Li, J. Luo, H. Wang, and G. Zhang, 2020, Differential enrichment of shale gas in upper Ordovician and lower Silurian controlled by the plate tectonics of the Middle-Upper Yangtze, south China: Marine and Petroleum Geology, v. 118, 104357.

Heller, R., and M. Zoback, 2014, Adsorption of methane and carbon dioxide on gas shale and pure mineral samples: Journal of Unconventional Oil and Gas Resources, v. 8, p. 14-24.

Hemingway, J., R.E. Lewis, A. Donald, and R. Reischman, 2012, Scientific target selection optimizes horizontal shale completions: Hart Energy Publishing, E&P, v. 85, no. 10, p. 72-75.

Hemmesch, N.T., N.B. Harris, C.A. Mnich, and D. Selby, 2014, A sequence-stratigraphic framework for the Upper Devonian Woodford Shale, Permian Basin, west Texas: AAPG Bulletin, v. 98, p. 23-47.

Henning, A.T., G. Paton, R. Martin, and R. Kelvin, 2011, Technologies enhance Eagle Ford 3-D: American Oil & Gas Reporter, v. 54, no. 4, p. 74-79.

Hennissen, J.A.I., E. Hough, C.H. Vane, M.J. Leng, S.J. Kemp, and M.H. Stephenson, 2017, The prospectivity of a potential shale gas play: An example from the southern Pennine Basin (central England, UK): Marine and Petroleum Geology, v. 86, p. 1047-1066.

Hester, S., 2013, Searching for the right mix of ‘shale’ and water: Hart Energy Publishing, E&P, v. 86, no. 5, p. 54-55.

Hickey, J.J., and B. Henk, 2007, Lithofacies summary of the Mississippian Barnett Shale, Mitchell 2 T.P. Sims well, Wise County, Texas: AAPG Bulletin, v. 91, p. 437-443.

Higley, D.K., 2011, Undiscovered petroleum resources for the Woodford Shale and Thirteen Finger Limestone–Atoka Shale assessment units, Anadarko Basin: U.S. Geological Survey Open File Report 2011–1242, 3 sheets, <http://pubs.usgs.gov/of/2011/1242>

Hill, D.G., and C.R. Nelson, 2000, Gas productive fractured shales: an overview and update: GRI GasTIPS, v. 6, p. 4-13.

Hill, D.G., 2000, New database quantifies impact of unconventional gas in U.S.: GasTIPS, v. 6, p. 21-23.

Hill, D.G., 2000, GIS compilation of gas potential of the New Albany Shale in the Illinois Basin: Gas Research Institute, GRI-00/0068, CD-ROM.

Hill, D.G., 2001, Consortium project results guide development of New Albany Shale: GRI GasTIPS, v.7, no. 2, p. 11-16.

Hill, D.G., P.G. Lillis, and J.B. Curtis, eds., 2008, Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, 373 p.

Hill, D.G., J.B. Curtis, and P.G. Lillis, 2008, Update on North America shale-gas exploration and development, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 11-42.

Hill, D.G., and R.J. Hasselbach, 2008, United States shale gas resource maps, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 241-243.

Hill, N.C., and D.E. Lancaster, 1995, Reservoir characterization of the Clough area, Barnett Shale, Wise County, Texas: Des Plaines, Illinois, Gas Technology Institute, GRI-96/0305, 65 p.

Hill, R.E., 1992, Analysis of natural and induced fractures in the Barnett Shale, Mitchell Energy Corporation, T.P. Sims No. 2, Wise County, Texas: Des Plaines, Illinois, Gas Technology Institute, GRI-92/0094, 51 p.

Hill, R., M. Middlebrook, R. Peterson, E. Johnson, S. McKetta, G. Wilson, and P. Branagan, 1993, Horizontal gas well completion technology in the Barnett Shale—Analysis of the Mitchell Energy Corporation T.P. Sims B No. 1, Wise County, Texas: Des Plaines, Illinois, Gas Technology Institute, GRI-93/0282, 68 p.

Hill, R.J., E. Zhang, Y. Tang, and B. Katz, 2006, Estimating shale gas potential from confined pyrolysis experiments (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 124, 126.

Hill, R.J., and D.M. Jarvie, eds., 2007, Special issue Barnett Shale: AAPG Bulletin, v. 91, p. 399-622.

Hill, R.J., D.M. Jarvie, J. Zumberge, M. Henry, and R.M. Pollastro, 2007, Oil and gas geochemistry and petroleum systems of the Fort Worth Basin: AAPG Bulletin, v. 91, p. 445-473.

Hill, R.J., E. Zhang, B.J. Katz, and Y. Tang, 2007, Modeling of gas generation from the Barnett Shale, Fort Worth Basin, Texas: AAPG Bulletin, v. 91, p. 501-521.

Hodenfield, K., 2012, Operators seek fracture consistency: American Oil & Gas Reporter, v. 55, no. 1, p. 151-159.

Hoffmann, A.A., and D.M. Borrok, 2020, The geochemistry of produced waters from the Tuscaloosa marine shale, USA: Applied Geochemistry, v. 116, 104568.

Hogan, M., 2013, An up-and-coming shale: Hart Energy Publishing, E&P, v. 86, no. 11, p. 88-94. (Utica)

Hogan, M., 2015, Marcellus-Utica shales: key players: Marcellus, Utica producers take a wait-and-see approach, in Marcellus-Utica shales playbook: Houston, Hart Energy Publishing, p. 16-31.

Holder, D., 2006, New Albany Shale interest extends into Illinois: American Oil & Gas Reporter, v. 49, no. 2, p. 153-155.

Holder, D., 2006, Illinois Basin’s mature areas yielding new potential: American Oil & Gas Reporter, v. 49, no. 6, p. 133-136.

Holder, D., 2007, New Albany play sparks Illinois Basin: American Oil & Gas Reporter, v. 50, no. 6, p. 139-142.

Holder, D., 2008, Volunteer state is ready for Chattanooga gas: American Oil & Gas Reporter, v. 51, no. 7, p. 146-149.

Holder, D., 2009, Marcellus Shale continues to live up to potential: American Oil & Gas Reporter, v. 52, no. 12, p. 140-142.

Holder, D., 2010, New York watches, waits, for Marcellus boom: American Oil & Gas Reporter,v. 53, no. 11, p. 129-132.

Holder, D., 2011, Marcellus Shale continues impacting Pennsylvania: American Oil & Gas Reporter, v. 54, no. 10, p. 184-186.

Holder, D., 2012, Texas enjoying the view atop its shale wave: American Oil & Gas Reporter, v. 55, no. 3, p. 132-136.

Holder, D., 2013, Marcellus Shale output yet to reach peak: American Oil & Gas Reporter, v. 56, no. 10, p. 152-154.

Holder, D., 2015, Rogersville Shale boosts hopes in Kentucky: American Oil & Gas Reporter, v. 58, no. 6, p. 108-109.

Holder, D., 2015, Shale revolution rewriting global energy equation: American Oil & Gas Reporter, v. 58, no. 12, p. 96-97.

Holditch, S.A., and W.J. Lee, 2007, Advances in technology key to realizing potential of unconventional gas: American Oil & Gas Reporter, v. 50, no. 3, p. 69-77.

Holditch, S.A., and W.B. Ayers, 2009, How technology transfer will expand the development of unconventional gas, worldwide, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 150-180.

Holditch, S.A., 2010, Shale gas holds global opportunities: American Oil & Gas Reporter, v. 53, no. 8, p. 38-42.

Holditch, S., 2012, Shale operators must follow best practices: Hart Energy Publishing, E&P, v. 85, no. 2, p. 78-79.

Holditch, S.A., 2013, Unconventional oil and gas resource development—Let’s do it right: Journal of Unconventional Oil and Gas Resources, v. 1-2, p. 2-8.

Holley, E., and R. Hull, 2011, Combined microseismic mapping and fiber-optic sensing assess fracture effectiveness in the Barnett Shale: World Oil, v. 232, no. 5, p. 31-38.

Holmes, M., A. Holmes, and D. Holmes, 2012, A petrophysical model for shale reservoirs to distinguish macro-porosity, micro-porosity, and TOC: AAPG Search and Discovery Article #40916, 14 p.

Holmes, M., A. Holmes, and D. Holmes, 2014, A comprehensive deterministic petrophysical analysis procedure for reservoir characterization: Conventional and unconventional reservoirs: AAPG Search and Discovery Article #41413, 33 p. <http://www.searchanddiscovery.com/documents/2014/41413holmes/ndx_holmes.pdf>

Holmes, R., H. Aljamaan, V. Vishal, J. Wilcox, and A.R. Kovscek, 2019, Idealized shale sorption isotherm measurements to determine pore capacity, pore size distribution, and surface area: Energy & Fuels, v. 33, p. 665-676.

Holt, R.M., M.H. Bhuiyan, M.I. Kolstø, A. Bakk, J.F. Stenebraten, and E. Fjær, 2011, Stress-induced versus lithological anisotropy in compacted claystones and soft shales: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 312-317.

Hong, L., J. Jain, V. Romanov, C. Lopano, C. Disenhof, A. Goodman, S. Hedges, D. Soeder, S. Sanguinito, and R. Dilmore, 2016, An investigation of factors affecting the interaction of CO2 and CH4 on shale in Appalachian Basin: Journal of Unconventional Oil and Gas Resources, v. 14, p. 99-112.

Hong, M., 2018, Growing US shale production reshaping global LNG market: Oil & Gas Journal, v. 116.6, p. 82-88.

Hong, S.K., Y.J. Shinn, J. Choi, and H.S. Lee, 2018, Estimation of original kerogen type and hydrogen index using inorganic geochemical proxies: Implications for assessing shale gas potential in the Devonian Horn River Formation of western Canada: AAPG Bulletin, v. 102, p. 2075-2099.

Hood, K.C., D.A. Yurewicz, and K.J. Steffen, 2012, Assessing continuous resources—building the bridge between statis and dynamic analyses: Bulletin of Canadian Petroleum Geology, v. 60, p. 112-133.

Horne, J.C., 2005, The future potential of shale reservoirs: in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 33.

Horne, J.C., and J.D. Wright, 2005, The use of EUR’s: a key to defining the parameters controlling Barnett Shale success: in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 35.

Horsfield, B., H.-M. Schulz, and I. Kapp, 2012, Shale gas in Europe: AAPG Search and Discovery Article #10380, 27 p. <http://www.searchanddiscovery.com/documents/2012/10380horsfield/ndx_horsfield.pdf>

Horsfield, B., H.-M. Schulz, S. Bernard, N. Mahlstedt, Y. Han, and S. Kuske, 2018, Oil and gas shales, in H. Wilkes, ed., Hydrocarbons, oils and lipids: Diversity, origin, chemistry and fate: Handbook of Hydrocarbon and Lipid Microbiology, Springer International Publishing, p. 1-34.

Horton, A.I., 1981, A comparative analysis of stimulations in the eastern gas shales: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-145, 145 p.

Hou, H., L. Shao, Y. Li, J. Lu, Z. Li, S. Wang, W. Zhang, and H. Wen, 2017, Geochemistry, reservoir characterization and hydrocarbon generation potential of lacustrine shale: A case of YQ-1 well in the Yuqia coalfield, northern Qaidam Basin, NW China: Marine and Petroleum Geology, v. 88, p. 458-471.

Hou, Y., S. He, N.B. Harris, J. Yi, Y. Wang, J. Zhang, and C. Cheng, 2017, The effects of shale composition and pore structure on gas adsorption potential in highly mature marine shales, Lower Paleozoic, central Yangtze, China: Canadian Journal of Earth Sciences, v. 54, no. 10, p. 1033-1048.

Hou, Y., K. Zhang, F. Wang, S. He, T. Dong, C. Wang, W. Qin, Y. Xiao, B. Tang, R. Yu, and X. Du, 2019, Structural evolution of organic matter and implications for graphitization in over-mature marine shales, south China: Marine and Petroleum Geology, v. 109, p. 304-316.

Houben, M.E., N.J. Hardebol, A. Barnhoorn, Q.D. Boersma, A. Carone, Y. Liu, D.A.M. de Winter, C.J. Peach, and M.R. Drury, 2017, Fluid flow from matrix to fractures in Early Jurassic shales: International Journal of Coal Geology, v. 175, p. 26-39.

Houben, M.E., A. Barnhoorn, C.J. Peach, and M.R. Drury, 2018, Potential permeability enhancement in Early Jurassic shales due to their swelling and shrinkage behavior: International Journal of Coal Geology, v. 196, p. 115-125. (Posidonia, Whitby)

Houghton, P., 2011, GGI reveals key insights in shale plays: American Oil & Gas Reporter, v. 54, no. 11, p. 86-91. (Gravity Gradiometry Imaging)

Houghton, P., 2012, GGI reduces risk, cost in shale plays: Hart Energy Publishing, E&P, v. 85, no. 2, p. 40, 42.

Houseknecht, D.W., W.A. Rouse, C.P. Garrity, K.J. Whidden, J.A. Dumoulin, C.J. Schenk, R.R. Charpentier, T.A. Cook, S.B. Gaswirth, M.A. Kirschbaum, and R.M. Pollastro, 2012, Assessment of potential oil and gas resources in source rocks of the Alaska North Slope, 2012: U.S. Geological Survey, Fact Sheet 2012-3013, 2 p. <http://pubs.usgs.gov/fs/2012/3013/>

Houseknecht, D.W., W.A. Rouse, S.T. Paxton, J.C. Mars, and B. Fulk, 2014, Upper Devonian-Lower Mississippian stratigraphic framework of the Arkoma Basin and distribution of potential source-rock facies in the Woodford-Chattanooga and Fayetteville-Caney shale-gas systems: AAPG Bulletin, v. 98, p. 1739-1759.

Hovey, R., 2009, Decision-support tools help identify opportunities in unconventional plays: American Oil & Gas Reporter, v. 52, no. 8, p. 50-57.

Hsu, S.-C., and P.P. Nelson, 2002, Characterization of Eagle Ford shale: Engineering Geology, v. 67, p. 169-183. <http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6V63-468DB36-1-25&_cdi=5803&_user=1617289&_orig=search&_coverDate=12%2F31%2F2002&_sk=999329998&view=c&wchp=dGLbVzW-zSkWz&md5=7e5e205880a0b2710d75621a96d7f895&ie=/sdarticle.pdf>

Hu, G., C. Sun, J. Huang, G. Xu, and J. Zhu, 2018, Evolution of shale microstructure under microwave irradiation stimulation: Energy & Fuels, v. 32, p. 11467-11476.

Hu, G., R. Yang, L. Wang, W. Hu, and J. Cao, 2019, Hydrocarbon potential and depositional environment of the Lower Cretaceous black mudstones and shales in the coastal Guangdong Province, China: Marine and Petroleum Geology, v. 99, p. 92-106.

Hu, G., Q. Pang, K. Jiao, C. Hu, and Z. Liao, 2020, Development of organic pores in the Longmaxi Formation overmature shales: Combined effects of thermal maturity and organic matter composition: Marine and Petroleum Geology, v. 116, 104314.

Hu, H., F. Hao, J. Lin, Y. Lu, Y. Ma, and Q. Li, 2017, Organic matter-hosted pore system in the Wufeng-Longmaxi (O3w-S11) shale, Jiaoshiba area, eastern Sichuan Basin, China: International Journal of Coal Geology, v. 173, p. 40-50.

Hu, H., F. Hao, X. Guo, F. Dai, Y. Lu, and Y. Ma, 2018, Investigation of methane sorption of overmature Wufeng-Longmaxi shale in the Jiaoshiba area, eastern Sichuan Basin, China: Marine and Petroleum Geology, v. 91, p. 251-261.

Hu, H., F. Hao, X. Guo, J. Yi, Z. Shu, H. Bao, and X. Zhu, 2019, Effect of lithofacies on the pore system of over-mature Longmaxi shale in the Jiaoshiba area, Sichuan Basin, China: Marine and Petroleum Geology, v. 109, p. 886-898.

Hu, K., and H. Mischo, 2020, High-pressure methane adsorption and desorption in shales from the Sichuan Basin, southwestern China: Energy & Fuels, v. 34, p. 2945-2957.

Hu, Q., Z. Gao, S. Peng, and R. Ewing, 2012, Pore structure inhibits gas diffusion in the Barnett Shale: AAPG Search and Discovery Article #50609, 2 p.

Hu, Q.-H., X.-G. Liu, Z.-Y. Gao, S.-G. Liu, W. Zhou, and W.-X. Hu, 2015, Pore structure and tracer migration behavior of typical American and Chinese shales: Petroleum Science, v. 12, p. 651-663.

Hu, Q.M., 2019, Fracture-matrix interaction, fluid flow and chemical movement in shale: AAPG Search and Discovery Article #51564, 34 p. <http://www.searchanddiscovery.com/pdfz/documents/2019/51564hu/ndx_hu.pdf.html>

Hu, Q., R. Kalteyer, J. Wang, and H.F. El-Sobky, 2019, Nanopetrophysical characterization of the Mancos Shale Formation in the San Juan Basin of northwestern New Mexico, USA: Interpretation, v. 7, no. 4, p. SJ45-SJ65.

Hu, Y., D. Devegowda, A. Striolo, A. Phan, T.A. Ho, F. Civan, and R. Sigal, 2015, The dynamics of hydraulic fracture water confined in nano-pores in shale reservoirs: Journal of Unconventional Oil and Gas Resources, v. 9, p. 31-39.

Hu, Z., W. Du, C. Sun, J. Wu, T. Zhu, J. Zhao, and C. Yan, 2018, Evolution and migration of shale facies and their control on shale gas: A case study from the Wufeng-Longmaxi Formations in the Sichuan Basin and its surroundings: Interpretation, v. 6, no. 4, p. SN57-SN70.

Hu, Z., Y. Li, J. Chang, X. Duan, Y. Mu, and Y. Xu, 2020, New model for production prediction of shale gas wells: Energy Fuels, v. 34, p. 16,486-16,492.

Huang, B., H. Tian, R.W.T. Wilkins, X. Xiao, ahd L. Li, 2013, Geochemical characteristics, palaeoenvironment and formation model of Eocene organic-rich shales in the Beibuwan Basin, South China Sea: Marine and Petroleum Geology, v. 48, p. 77-89.

Huang, C., Y. Ju, H. Zhu, Y. Qi, K. Yu, Y. Sun, and L. Ju, 2019, Nano-scale pore structure and fractal dimension of Longmaxi Shale in the Upper Yangtze region, south China: A case study of the Laifeng-Xianfeng Block using HIM and N2 Adsorption: Minerals, v. 9, 19 p.

Huang, C., C. Yang, and F. Shen, 2019, Fracability evaluation of lacustrine shale by integrating brittleness and fracture toughness: Interpretation, v. 7, no. 2, p. T363-T372.

Huang, H., W. Sun, F. Xiong, L. Chen, X. Li, T. Gao, Z. Jiang, W. Ji, Y. Wu, and J. Han, 2018, A novel method to estimate subsurface shale gas capacities: Fuel, v. 232, p. 341-350.

Huang, J., T. Cavanaugh, and B. Nur, 2013, An introduction to SEM operational principles and geologic applications for shale hydrocarbon reservoirs, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 1-6.

Huang, L., Z. Ning, Q. Wang, H. Ye, Z. Wang, and Z. Sun, 2018, Microstructure and adsorption properties of organic matter in Chinese Cambrian gas shale: Experimental characterization, molecular modeling and molecular simulation: International Journal of Coal Geology, v. 198, p. 14-28.

Huang, R., Y. Wang, S. Cheng, S. Liu, and L. Cheng, 2015, Selection of logging-based TOC calculation methods for shale reservoirs: A case study of the Jiaoshiba shale gas field in the Sichuan Basin: Natural Gas Industry B, v. 2, p. 155-161.

Huang, Y., K. Zhang, Z. Jiang, Y. Song, S. Jiang, C. Jia, W. Liu, M. Wen, X. Xie, T. Liu, X. Li, X. Wang, X. Liu, Y. Zhang, and L Tang, 2019, A cause analysis of the high-content nitrogen and low-content hydrocarbon in shale gas: A case study of the Early Cambrian in Xiuwu Basin, Yangtze region: Geofluids, Article ID 1435892, 13 p.

Huchton, T.J., D.N. Welch, G.P. Zieche, E. Ejofodomi, J. Baihly, R. Malpani, and R. Altman, 2012, Integrating data key in Marcellus pilot: American Oil & Gas Reporter, v. 55, no. 2, p. 56-64.

Hudson, R., 2013, Oil, oil everywhere, in Permian Basin: the 2013 playbook: Houston, Hart Energy Publishing, p. 94-97. (economics)

Hulsey, K.M., 2011, Lithofacies characterization and sequence stratigraphic framework for some gas-bearing shales within the Horn River Basin, northeastern British Columbia: Norman, University of Oklahoma, unpublished M.S. thesis, 68 p.

Hume, J.B., K. Kerrihard, L. Austbo, B. McPherson, G. Waters, B. Dean, and R. Downie, 2009, Simul-fracs enhance Woodford wells: American Oil & Gas Reporter, v. 52, no. 3, p. 75-87.

Humphrys, M., 2013, Process solves shale gas challenges: American Oil & Gas Reporter, v. 56, no. 3, p. 113-117.

Hunter, C.D., and D.M. Young, 1953, Relationship of natural gas occurrence and production in eastern Kentucky (Big Sandy gas field) to joints and fractures in Devonian bituminous shale: AAPG Bulletin, v. 37, p. 282-299.

Hunter, W., M. Turner, J. Villalobos, J. Baihly, and A. Peña, 2015, Systematic candidate selection improves Haynesville refracturing economics: World Oil, v. 236, no. 12, p. 67-72.

Hutchinson, W.P., 2006, Diagnostics close loop in shales: Hart Energy Publishing, E&P, v. 79, no. 11, p. 41-43.

Hutt, J.B., 2011, Getting to ‘yes’ on shale gas: Hart Energy Publishing, E&P, v. 84, no. 8, p. 92.

Ibad, S.M., and E. Padmanabhan, 2020, Methane sorption capacities and geochemical characterization of Paleozoic shale formations from western peninsula Malaysia: Implication of shale gas potential: International Journal of Coal Geology, v. 224, 103480

Ikeocha, C., F. Mengel, Y. Simon, P. Pearce, J. Kiester, S. McKetta, J. Jeffers, H. Ramakrishnan, S. Sinha, and M. Woods, 2012, Study identifies drivers in Fayetteville: American Oil & Gas Reporter, v. 55, no. 3, p. 86-93.

Ilhan, M.A., 2008, Understanding coring operations for shale gas exploration, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 229-239.

Ilk, D., and T.A. Blasingame, 2013, Method provides workflow for analyzing, modeling Eagle Ford production (part one): American Oil & Gas Reporter, v. 56, no. 7, p. 70-81.

Imber, J., H. Armstrong, S. Clancy, S. Daniels, L. Herringshaw, K. McCaffrey, J. Rodrigues, J. Travucho-Alexandre, and C. Warren, 2014, Natural fractures in a United Kingdom shale reservoir analog, Cleveland Basin, northeast England: AAPG Bulletin, v. 98, p. 2411-2437.

Inamdar, A., T. Ogundare, D. Purcell, R. Malpani, K. Atwood, K. Brook, and A. Erwemi, 2011, Pilot wells test stimulation approach: American Oil & Gas Reporter, v. 54, no. 6, p. 61-67. (Eagle Ford Shale)

İnan, S., F. Goodarzi, A. Schmidt Mumm, K. Arouri, S. Qathami, O.H. Ardakani, T. İnan, and A.A. Tuwailib, 2016, The Silurian Qusaiba hot shales of Saudi Arabia: An integrated assessment of thermal maturity: International Journal of Coal Geology, v. 159, p. 107-119.

İnan, S., M.A. AbuAli, and A.M. Hakami, 2017, A petroleum system and basin modeling study of northwest and east-central Saudi Arabia: Effect of burial history and adjacent rock lithology on the gas potential of the Silurian Qusaiba shales, in M.A. AbuAli, I. Moretti, and H.M. Nordgård Bolås, eds., Petroleum systems analysis—Case studies: AAPG Memoir 114, p. 1-35.

İnan, S., H.A. Badairy, T. İnan, and A.A. Zahrani, 2018, Formation and occurrence of organic matter-hosted porosity in shales: International Journal of Coal Geology, v. 199, p. 39-51.

Intek, 2011, Review of emerging resources: U.S. shale gas and shale oil plays: U.S. Energy Information Administration, 82 p. <http://www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf>

Isaacs, C.M., and J. Rullkötter, eds., 2001, The Monterey Formation: from rocks to molecules: New York, Columbia University Press, 553 p.

Islam, A., and T. Patzek, 2014, Slip in natural gas flow through nanoporous shale reservoirs: Journal of Unconventional Oil and Gas Resources, v. 7, p. 49-54.

Islam, M.A., and P. Skalle, 2013, Experimentally evaluating shale dilation behavior, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 121-132.

Jacobs, S., 2013, Technology needs in North American shales require solutions: World Oil, v. 234, no. 7, p. S-119 to S-124.

Jacot, R.H., L.W. Bazan, and B.R. Meyer, 2011, Technologies optimize Marcellus wells: American Oil & Gas Reporter, v. 54, no. 8, p. 192-199.

Jaiswal, P., B. Varacchi, P. Ebrahimi, J. Dvorkin, and J. Puckette, 2014, Can seismic velocities predict sweet spots in the Woodford Shale? A case study from McNeff 2-28 well, Grady County, Oklahoma: Journal of Applied Geophysics, v. 104, p. 26-34.

Janwadkar, S., and G. Jackson, 2009, Real-time data optimize Barnett wells: American Oil & Gas Reporter, v. 52, no. 8, p. 66-71.

Janwadkar, S., C. Klotz, B. Welch, and S. Finegan, 2010, Electromagnetic MWD improves drilling performance in the Fayetteville: World Oil, v. 231, no. 6, p. 43-47.

Jarvie, D.M., R.J. Hill, and R.M. Pollastro, 2005, Assessment of the gas potential and yields from shales: the Barnett Shale model, in B.J. Cardott, ed., Unconventional energy resources in the southern Midcontinent, 2004 symposium: Oklahoma Geological Survey Circular 110, p. 37-50.

Jarvie, D.M., and R. Inden, 2006, Geochemical assessment of shale gas and shale oil potential in Rocky Mountain basins, U.S.A. and Canada (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 128, 130.

Jarvie, D.M., 2006, Comparison of producing and prospective shale gas plays in the U.S.A. and Canada (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p.130.

Jarvie, D.M., R.J. Hill, T.E. Ruble, and R.M. Pollastro, 2007, Unconventional shale-gas systems: The Mississippian Barnett Shale of north-central Texas as one model for thermogenic shale-gas assessment: AAPG Bulletin, v. 91, p. 475-499.

Jarvie, D.M., 2010, Shale geochemistry; reservoir-rock savvy: Oil and Gas Investor, v. 30, no. 5, p. 65-66.

Jarvie, D.M., B.M. Jarvie, W.D. Weldon, and A. Maende, 2012, Components and processes impacting production success from unconventional shale resource systems: AAPG Search and Discovery Article #40908, 40 p. <http://www.searchanddiscovery.com/documents/2012/40908jarvie/ndx_jarvie.pdf>

Jarvie, D.M., 2012, Shale resource systems for oil and gas: Part 1—Shale-gas resource systems, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 69-87.

Jarvie, D.M., 2012, Shale resource systems for oil and gas: Part 2—Shale-oil resource systems, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 89-119.

Jarvie, D.M., 2014, Components and processes affecting producibility and commerciality of shale resource systems: Geologica Acta, v. 12, no. 4, p. 307-325.

Jarvie, D.M., 2015, Geochemical assessment of unconventional shale gas resource systems, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 47-69.

Jarvie, D.M., D. Prose, B.M. Jarvie, R. Drozd, and A. Maende, 2017, Conventional and unconventional petroleum systems of the Delaware Basin: AAPG Search and Discovery Article #10949, 21 p.

Jarvie, D.M., 2017, Perspectives on shale resource plays, in I. Suárez-Ruiz, and J.G. Mendonça Filho, eds., The role of organic petrology in the exploration of conventional and unconventional hydrocarbon systems: Sharjah, U.A.E., Bentham Science Publishers, p. 321-348.

Javadpour, F., 2009, Nanopores and apparent permeability of gas flow in mudrocks (shales and siltstone): Journal of Canadian Petroleum Technology, v. 48, p. 16-21.

Javadpour, F., M. Morawej, and M. Amrein, 2012, Atomic force microscopy (AFM): a new tool for gas shale characterization: Journal of Canadian Petroleum Technology, v. 51, p. 236-243.

Javadpour, F., M. McClure, and M.E. Naraghi, 2015, Slip-corrected liquid permeability and its effect on hydraulic fracturing and fluid loss in shale: Fuel, v. 160, p. 549-559.

Javadpour, F., and A. Ettehadtavakkol, 2015, Gas transport processes in shale, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 245-266.

Javadpour, F., 2016, Gas and liquid flow in shale: AAPG Search and Discovery Article #41780, 61 p. <http://www.searchanddiscovery.com/pdfz/documents/2016/41780javadpour/ndx_javadpour.pdf.html>

Jayakumar, R., R. Yalavarthi, C. Nyaaba, and R. Rai, 2014, Variables impact completion efficiency: American Oil & Gas Reporter, v. 57, no. 6, p. 55-61.

Javier, P., 2006, High resolution facies analysis of the Barnett Shale, Newark field, Fort Worth Basin, north-central Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 51 p.

Jenkins, C.D., and C.M. Boyer, 2008, Coalbed and shale gas reservoirs: Journal of Petroleum Technology, v. 60, no. 2, p. 92-99.

Jenkins, C., 2009, Estimating resources and reserves in coal-bed methane and shale gas reservoirs, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 282-302.

Jennings, D.S., and J. Antia, 2013, Petrographic characterization of the Eagle Ford Shale, south Texas: Mineralogy, common constituents, and distribution of nanometer-scale pore types, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 101-113.

Jensen, F.S., T.L. Thompson, and J.R. Howe, 2001, Discovery of economic fractured source-rock reservoirs in the Devonian and Mississippian of Oklahoma, in K.S. Johnson, ed., Silurian, Devonian, and Mississippian geology in the southern Midcontinent, 1999 symposium: OGS Circular 105, p. 177.

Jhamandas, S., 2011, Advanced microseismics optimize unconventional development: Hart Energy Publishing, E&P, v. 84, no. 2, p. 40-41.

Ji, L., W. Jiang, G. Cao, J. Zhou, and C. Luo, 2019, Investigation into the apparent permeability and gas-bearing property in typical organic pores in shale rocks: Marine and Petroleum Geology, v. 110, p. 871-885.

Ji, W., Y. Song, Z. Jiang, X. Wang, Y. Bai, and J. Xing, 2014, Geological controls and estimation algorithms of lacustrine shale gas adsorption capacity: A case study of the Triassic strata in the southeastern Ordos Basin, China: International Journal of Coal Geology, v. 134-135, p. 61-73.

Ji, W., Y. Song, Z. Jiang, L. Chen, Z. Li, X. Yang, and M. Meng, 2015, Estimation of marine shale methane adsorption capacity based on experimental investigations of Lower Silurian Longmaxi Formation in the Upper Yangtze Platform, south China: Marine and Petroleum Geology, v. 68, p. 94-106.

Ji, W., Y. Song, Z. Jiang, M. Meng, Q. Liu, L. Chen, P. Wang, F. Gao, and H. Huang, 2016, Fractal characteristics of nano-pores in the Lower Silurian Longmaxi shales from the Upper Yangtze Platform, south China: Marine and Petroleum Geology, v. 78, p. 88-98.

Ji, W., Y. Song, Z. Rui, M. Meng, and H. Huang, 2017, Pore characterization of isolated organic matter from high matured gas shale reservoir: International Journal of Coal Geology, v. 174, p. 31-40.

Ji, W., F. Hao, H.-M. Schulz, Y. Song, and J. Tian, 2019, The architecture of organic matter and its pores in highly mature gas shales of the lower Silurian Longmaxi Formation in the upper Yangtze platform, south China: AAPG Bulletin, v. 103, p. 2909-2942.

Ji, W., F. Hao, Y. Song, J. Tian, M. Meng, and H. Huang, 2020, Organic geochemical and mineralogical characterization of the lower Silurian Longmaxi shale in the southeastern Chongqing area of China: Implications for organic matter accumulation: International Journal of Coal Geology, v. 220, 103412.

Jia, A., D. Hu, S. He, X. Guo, Y. Hou, T. Wang, and R. Yang, 2020, Variations of pore structure in organic-rich shales with different lithofacies from the Jiangdong Block, Fuling shale gas field, SW China: Insights into gas storage and pore evolution: Energy & Fuels, v. 34, p. 12,457-12,475.

Jia, B., J.-S. Tsau, and R. Barati, 2018, A workflow to estimate shale gas permeability variations during the production process: Fuel, v. 220, p. 879-889.

Jia, P., L. Cheng, C.R. Clarkson, and J.D. Williams-Kovacs, 2017, Flow behavior analysis of two-phase (gas/water) flowback and early-time production from hydraulically-fractured shale gas wells using a hybrid numerical/analytical model: International Journal of Coal Geology, v. 182, p. 14-31.

Jia, P., L. Cheng, C.R. Clarkson, S. Huang, Y. Wu, and J.D. Williams-Kovacs, 2018, A novel method for interpreting water data during flowback and early-time production of multi-fractured horizontal wells in shale reservoirs: International Journal of Coal Geology, v. 200, p. 186-198.

Jia, Y., J. Tang, Y. Lu, and Z. Lu, 2021, Laboratory geomechanical and petrophysical characterization of Longmaxi shale properties in Lower Silurian Formation, China: Marine and Petroleum Geology, v. 124, 104800.

Jian-Chun, G., and Z. Zhi-Hong, 2012, China vigorously promoting shale gas exploration, development: Oil & Gas Journal, v. 110.3, p. 60-65.

Jiang, F., D. Chen, Z. Wang, Z. Xu, J. Chen, L. Liu, Y. Huyan, and Y. Liu, 2016, Pore characteristic analysis of a lacustrine shale: A case study in the Ordos Basin, NW China: Marine and Petroleum Geology, v. 73, p. 554-571.

Jiang, J., and R.M. Younis, 2015, A multimechanistic multicontinuum model for simulating shale gas reservoir with complex fractured system: Fuel, v. 161, p. 333-344.

Jiang, S., J. Zhang, Z. Jiang, Z. Xu, D. Cai, L. Chen, Y. Wu, D. Zhou, Z. Jiang, X. Zhao, and S. Bao, 2015, Geology, resource potentials, and properties of emerging and potential China shale gas and shale oil plays: Interpretation, v. 3, no. 2, p. SJ1-SJ13.

Jiang, S., Z. Xu, Y. Feng, J. Zhang, D. Cai, L. Chen, Y. Wu, D. Zhou, S. Bao, and S. Long, 2016, Geologic characteristics of hydrocarbon-bearing marine, transitional and lacustrine shales in China: Journal of Asian Earth Sciences, v. 115, p. 404-418.

Jiang, T., Z. Jin, G. Liu, Q. Liu, B. Gao, Z. Liu, H. Nie, J. Zhao, R. Wang, T. Zhu, and T. Yang, 2019, Source analysis of siliceous minerals and uranium in Early Cambrian shales, south China: Significance for shale gas exploration: Marine and Petroleum Geology, v. 102, p. 101-108.

Jiang, Z., X. Tang, L. Cheng, Z. Li, Y. Zhang, Y. Bai, Y. Yuan, and J. Hao, 2015, Characterization and origin of the Silurian Wufeng-Longmaxi Formation shale multiscale heterogeneity in southeastern Sichuan Basin, China: Interpretation, v. 3, no. 2, p. SJ61-SJ74.

Jiao, K., S. Yao, C. Liu, Y. Gao, H. Wu, M. Li, and Z. Tang, 2014, The characterization and quantitative analysis of nanopores in unconventional gas reservoirs utilizing FESEM-FIB and image processing: An example from the lower Silurian Longmaxi Shale, upper Yangtze region, China: International Journal of Coal Geology, v. 128-129, p. 1-11.

Jin, X., S.N. Shah, J.-C. Roegiers, and B. Zhang, 2014, Fracability evaluation in shale reservoirs — An integrated petrophysics and geomechanics approach: SPE Paper 168589, 14 p.

Jin, Z., H. Nie, Q. Liu, J. Zhao, and T. Jiang, 2018, Source and seal coupling mechanism for shale gas enrichment in Upper Ordovician Wufeng Formation – Lower Silurian Longmaxi Formation in Sichuan Basin and its periphery: Marine and Petroleum Geology, v. 97, p. 78-93.

Jinzhou, Z., Y. Hai, L. Yongming, and L. Tao, 2014, China accelerates shale gas development: Oil & Gas Journal, v. 112.10, p. 70-78.

Jinzhou, Z., L. Yongming, W. Song, J. Youshi, and Z. Liehui, 2014, Simulation of complex fracture networks influenced by natural fractures in shale gas reservoir: Natural Gas Industry B, v. 1, p. 89-95.

Jiu, K., W. Ding, W. Huang, Y. Zhang, S. Zhao, and L. Hu, 2013, Fractures of lacustrine shale reservoirs, the Zhanhua Depression in the Bohai Bay Basin, eastern China: Marine and Petroleum Geology, v. 48, p. 113-123.

Johnson, K., 2008, Shale mania spreads across country: American Oil & Gas Reporter, v. 51, no. 12, p. 93-101.

Johnson, K., 2009, Natural gas processors respond to rapid growth in shale gas production: American Oil & Gas Reporter, v. 52, no. 5, p. 56-64.

Johnson, K., 2010, Projects analyze variety of reservoirs: American Oil & Gas Reporter, v. 53, no. 12, p. 104-113.

Johnson, K., 2013, Unconventional plays driving new capabilities in computing technology: American Oil & Gas Reporter, v. 56, no. 11, p. 70-77.

Johnson, K., 2013, Innovative solutions pave way forward: American Oil & Gas Reporter, v. 56, no. 11, p. 78-87.

Johnson, K., 2015, Pioneers see success in shale refracs: American Oil & Gas Reporter, v. 58, no. 8, p. 54, 56-57.

Johnson, L.M., M. Raji, A.P. Oluboyo, O. Owolabi, and S.W. Adepoju, 2014, Evaluation of the potential for shale gas exploration in the Fika shales of the Gongola Basin, Upper Benue Trough, Nigeria: AAPG Search and Discovery Article 10596, 10 slides. <http://www.searchanddiscovery.com/documents/2014/10596johnson/ndx_johnson.pdf>

Johnson, M.D., J.J. Pechiney, and C.P. Moore, 2014, Diagnostics optimize completion designs in horizontal shale plays, part 2: American Oil & Gas Reporter, v. 57, no. 9, p. 54-63. (Woodford Shale)

Johnson, T.G., 2015, Changing times usher in next phase for shale: Shaletech Report, supplement to World Oil, v. 236, no. 5, p. S-3.

Johnston, D., 2004, Barnett Shale—1. Technological advances expand potential play: Oil & Gas Journal, v. 102.3, p. 51-59.

Johnston, D., 2004, Barnett Shale—conclusion: Reservoir characterization improves stimulation, completion practices: Oil & Gas Journal, v. 102.4, p. 60-63.

Jolly, J., T. Baughn, G. Little, T. Cox, and A. Majek, 2016, Accelerated production improves shale well economics: World Oil, v. 237, no. 3, p. 59-63.

Josh, M., L. Esteban, C.D. Piane, J. Sarout, D.N. Dewhurst, and M.B. Clennell, 2012, Laboratory characterization of shale properties: Journal of Petroleum Science and Engineering, v. 88-89, p. 107-124.

Josh, M., C.D. Piane, L. Esteban, J. Bourdet, S. Mayo, B. Pejcic, K. Burgar, V. Luzin, M.B. Clennell, and D.N. Dewhurst, 2019, Advanced laboratory techniques characterizing solids, fluids and pores in shales: Journal of Petroleum Science and Engineering, v. 180, p. 932-949.

Ju, B., and D. Wu, 2016, Experimental study on the pore characteristics of shale rocks in Zhanhua depression: Journal of Petroleum Science and Engineering, v. 146, p. 121-128.

Ju, W., J. Shen, Y. Qin, S. Meng, C. Wu, Y. Shen, Z. Yang, G. Li, and C. Li, 2017, In-situ stress state in the Linxing region, eastern Ordos Basin, China: Implications for unconventional gas exploration and production: Marine and Petroleum Geology, v. 86, p. 66-78.

Ju, W., J. Wang, H. Fang, and W. Sun, 2019, Paleotectonic stress field modeling and prediction of natural fractures in the Lower Silurian Longmaxi shale reservoirs, Nanchuan region, South China: Marine and Petroleum Geology, v. 100, p. 20-30.

Ju, Y., Y. Sun, J. Tan, H. Bu, K. Han, X. Li, and L. Fang, 2018, The composition, pore structure characterization and deformation mechanism of coal-bearing shales from tectonically altered coalfields in eastern China: Fuel, v. 234, p. 626-642.

Jubb, A.M., L.F. Ruppert, T.G.A. Youngs, and T.F. Headen, 2020, Exploring methane behavior in Marcellus Shale micropores via Contrast Matching Neutron Scattering: Energy Fuels, v. 34, p. 10926-10932.

Juvkam-Wold, H.C., 2009, Unconventional Resources—US gas: Demand, supply and reserves: World Oil, v. 230, no. 10, p. 81-85.

K & A Energy Consultants, Inc., 1993, Characterization of natural fractures in the Devonian Shale, GRI Experimental Development Research Area, Pike County, Kentucky: Des Plaines, Illinois, Gas Technology Institute, GRI-93/0157, 97 p.

K & A Energy Consultants, Inc., 1993, Geologic controls on gas production, GRI Experimental Development Research Area, Pike County, Kentucky, Volume 1: Des Plaines, Illinois, Gas Technology Institute, GRI-93/0197.1, 115 p.

Kabir, P., F.-J. Ulm, and A.-T. Akono, 2017, Rate-independent fracture toughness of gray and black kerogen-rich shales: Acta Geotechnica.

Kaiser, M.J., and Y. Yu, 2011, How Haynesville shale will lift Louisiana’s gas production profile: Oil & Gas Journal, v. 109.18, p. 64-77.

Kaiser, M.J., and Y. Yu, 2011, Haynesville Shale well performance and development potential: Natural Resources Research, v. 20, p. 217-229.

Kaiser, M.J., and Y. Yu, 2011, Louisiana Haynesville Shale—1. Characteristics, production potential of Haynesville shale wells described: Oil & Gas Journal, v. 109.19, p. 68-79, 109.

Kaiser, M.J., and Y. Yu, 2012, Louisiana Haynesville Shale—3 (conclusion). Operating envelope of Haynesville shale wells’ profitability described: Oil & Gas Journal, v. 110.2, p. 60-67.

Kaiser, M.J., 2012, Profitability assessment of Haynesville shale gas wells: Energy, v. 38, p. 315-330.

Kaiser, M.J., 2012, Haynesville relaxes on cheap gas, draw of liquids plays, drill-outs: Oil & Gas Journal, v. 110.12, p. 68-73.

Kaiser, M.J., and Y. Yu, 2013, Haynesville update—1. North Louisiana gas shale’s drilling decline precipitous: Oil & Gas Journal, v. 111.12, p. 62-67.

Kaiser, M.J., and Y. Yu, 2014, Haynesville update—2. North Louisiana drilling costs vary slightly 2007-12: Oil & Gas Journal, v. 112.1, p. 54-61.

Kaiser, M.J., and Y. Yu, 2014, Haynesville update—3. Low gas price constrains profitability: Oil & Gas Journal, v. 112.2, p. 52-59.

Kaiser, M.J., and Y. Yu, 2014, Haynesville update—4. Haynesville outlook hinges on gas price: Oil and Gas Journal, v. 112.3, p. 62-65.

Kaiser, M.J., and Y. Yu, 2015, Drilling and completion cost in the Lousiana Haynesville Shale, 2007–2012: Natural Resources Research, v. 24, p. 5-31.

Kaiser, M.J., 2015, Haynesville Louisiana drilling and production update 2012: Natural Resources Research, v. 24, p. 33-51.

Kalani, M., J. Jahren, N.H. Mondol, and J.I. Faleide, 2015, Petrophysical implications of source rock microfracturing: International Journal of Coal Geology, v. 143, p. 43-67.

Kashikar, S., and T. Jbeili, 2015, Beating the decline through refracturing: World Oil, v. 236, no. 6, p. 39-43.

Katz, B., and F. Lin, 2014, Lacustrine basin unconventional resource plays: Key differences: Marine and Petroleum Geology, v. 56, p. 255-265.

Katz, B.J., and I. Arango, 2018, Organic porosity: A geochemist’s view of the current state of understanding: Organic Geochemistry, v. 123, p. 1-16.

Kazemi, M., and A. Takbiri-Borujeni, 2015, An analytical model for shale gas permeability: International Journal of Coal Geology, v. 146, p. 188-197.

Kazemi, H., I. Eker, M.A. Torcuk, and B. Kurtoglu, 2015, Performance analysis of unconventional shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 283-300.

Kellow, F., J. Everage, S. Altizer, and J. Veloz, 2011, Program reduces NPT in Barnett Shale: American Oil & Gas Reporter, v. 54, no. 4, p. 117-123.

Kelso, B.S., T.E. Lombardi, and J.A. Kuuskraa, 1996, Drilling and production statistics for major U.S. coalbed methane and gas shale reservoirs: Des Plaines, Illinois, Gas Technology Institute, Report GRI-96/0052, 59 p.

Kelso, B.S., 2007, Technology drives success in booming Niobrara play: American Oil & Gas Reporter, v. 50, no. 1, p. 112-121.

Kendrick, D., E. Luckey, P. Ramsaywack, and J. Sheldon, 2008, Minimize fluid in energized fracs: Hart Energy Publishing, E&P, v. 81, no. 9, p. 41-44.

Kennedy, R., 2015, Gas shale challenges over the asset life cycle, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 361-380.

Kepes, J., B. Rodgers, and P. van Meurs, 2011, Gas prices, other factors indicate changes in North American/shale play fiscal systems: Oil & Gas Journal, v. 109.11, p. 56-66.

Kepferle, R.C., 1993, A depositional model and basin analysis for the gas-bearing black shale (Devonian and Mississippian) in the Appalachian Basin, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. F1-F23.

Kerr, J., 2005, Barnett operators turn to ‘turnizontals’: American Oil & Gas Reporter, v. 48, no. 7, p. 82-85.

Ketter, A.A., J.L. Daniels, J.R. Heinze, and G. Waters, 2007, Optimizing completion strategies for fracture initiation in Barnett Shale horizontal wells: Journal of Petroleum Technology, v. 59, no. 3, p. 45-49.

Khan, S., and A. Yadav, 2014, Integrating geomechanics improves drilling performance: Hart Energy Publishing, E&P, v. 87, no. 1, p. 40-41.

Khosrokhavar, R., K.-H. Wolf, and H. Bruining, 2014, Sorption of CH4 and CO2 on a carboniferous shale from Belgium using a manometric setup: International Journal of Coal Geology, v. 128-129, p. 153-161.

Kidd, G., and F. Jenson, 2010, An integrated workflow for selecting optimal drilling locations: Hart Energy Publishing, E&P, v. 83, no. 6, p. 36-39.

Kidder, M., T. Palmgren, A. Ovalle, and M. Kapila, 2011, Treatment options for reuse of frac flowback and produced water from shale: World Oil, v. 232, no. 7, p. 95-99.

Kiesel, M.A., 2013, Chemostratigraphy and elemental analysis of the Mississippian Barnett Shale Formation using energy-dispersive x-ray fluorescence spectrometry, Fort Worth Basin, Johnson County, Texas: Fort Worth, TX, Texas Christian University, unpublished M.S. thesis.

Kilian, B.J., 2012, Sequence stratigraphy of the Woodford Shale, Anadarko Basin, Oklahoma: Implications on regional Woodford target correlation: Norman, University of Oklahoma, unpublished M.S. thesis, 102 p.

Kim, C., H. Jang, and J. Lee, 2015, Experimental investigation on the characteristics of gas diffusion in shale gas reservoir using porosity and permeability of nanopore scale: Journal of Petroleum Science and Engineering, v. 133, p. 226-237.

King, G., 2014, Best practices lead to successful shale fracturing: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-79 to S-83.

King, G., 2015, Innovation and adaptation win again: Hart Energy Publishing, E&P, v. 88, no. 2, p. 42, 44. (hydraulic fracturing)

King, G.E., 2012, Estimating frac risk and improving frac performance in unconventional gas and oil wells: version of SPE 152596, 88 p. [Estimating and explaining fracture risk, <http://www.gekengineering.com/id6.html>]

King, G.E., 2014, Unconventional resources, part three: Improving recovery factors in liquids-rich resource plays requires new approaches: American Oil & Gas Reporter, v. 57, no. 3, p. 66-77.

King, G.E., 2015, Economics favor refracs of horizontal wells in unconventional plays: American Oil & Gas Reporter, v. 58, no. 4, p. 62-69.

Kinley, T., 2006, Geology and hydrocarbon potential of the Barnett Shale (Mississippian) in the northern Delaware Basin, west Texas and southeastern New Mexico: Fort Worth, Texas Christian University, unpublished M.S. thesis, 81 p.

Kinley, T.J., L.W. Cook, J.A. Breyer, D.M. Jarvie, and A.B. Busbey, 2008, Hydrocarbon potential of the Barnett Shale (Mississippian), Delaware Basin, west Texas and southeastern New Mexico: AAPG Bulletin, v. 92, p. 967-991.

Kirschbaum, M.A., C.J. Schenk, T.A. Cook, R.T. Ryder, R.R. Charpentier, T.R. Klett, S.B. Gaswirth, M.E. Tennyson, and K.J. Whidden, 2012, Assessment of undiscovered oil and gas resources of the Ordovician Utica Shale of the Appalachian Basin Province, 2012: USGS Fact Sheet 2012-3116, 6 p. <http://pubs.usgs.gov/fs/2012/3116/FS12-3116.pdf>

Klann, S., 2010, Deep Bossier cools its heels: Oil and Gas Investor, v. 30, no. 1, p. 99-100.

Klann, S., 2013, The shale pillar: Oil and Gas Investor, v. 33, no. 7, p. 11.

Klann, S., 2013, Capital destruction, intensity in the shales: Oil and Gas Investor, v. 33, no. 10, p. 9.

Klann, S., and C. Hepper, 2016, Making the Montney work: Oil and Gas Investor, v. 36, no. 11, p. 73-76.

Klann, S., 2017, Stark: STACK/SCOOP growing up fast, top single well rates: Oil and Gas Investor, v. 37, no. 1, p. 32, 34, 36.

Klann, S., 2017, Probing the limits of the Scoop/Stack, in SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, p. 4-11.

Klaver, J., G. Desbois, J.L. Urai, and R. Littke, 2012, BIB-SEM study of the pore space morphology in early mature Posidonia Shale from the Hils area, Germany: International Journal of Coal Geology, v. 103, p. 12-25.

Klett, T.R., M.E. Brownfield, T.M. Finn, S.B. Gaswirth, P.A. Le, H.M. Leathers-Miller, K.R. Marra, T.J. Mercier, J.K. Pitman, C.J. Schenk, M.E. Tennyson, and C.A. Woodall, 2017, Assessment of undiscovered continuous oil and gas resources in the Domanik-type formations of the Volga-Ural Region Province, Russia, 2017: U.S. Geological Survey Fact Sheet 2017-3085, 2 p. <https://pubs.er.usgs.gov/publication/fs20173085>

Knapp, L.J., O.H. Ardakani, S. Uchida, T. Nanjo, C. Otomo, and T. Hattori, 2020, The influence of rigid matrix minerals on organic porosity and pore size in shale reservoirs: Upper Devonian Duvernay Formation, Alberta, Canada: International Journal of Coal Geology, v. 227, 103525.

Ko, L.T., S.C. Ruppel, R.G. Loucks, P.C. Hackley, T. Zhang, and D. Shao, 2018, Pore-types and pore-network evolution in Upper Devonian-Lower Mississippian Woodford and Mississippian Barnett mudstones: Insights from laboratory thermal maturation and organic petrology: International Journal of Coal Geology, v. 190, p. 3-28.

Ko, L.T-W., R.G. Loucks, K.L. Milliken, T. Zhang, P.C. Hackley, R.M. Reed, S.C. Ruppel, and P. Smith, 2019, How depositional environment, diagenesis, and thermal maturity affect the evolution and significance of organic and mineral pore systems in unconventional oil and gas reservoirs: Current understanding and future research: AAPG Search and Discovery Article #80705, 50 p. <http://www.searchanddiscovery.com/pdfz/documents/2019/80705ting-wei%20ko/ndx_ting-wei%20ko.pdf.html>

Kohl, D., R. Slingerland, M. Arthur, R. Bracht, and T. Engelder, 2014, Sequence stratigraphy and depositional environments of the Shamokin (Union Springs) member, Marcellus Formation, and associated strata in the middle Appalachian Basin: AAPG Bulletin, v. 98, p. 483-513.

Kohlhaas, J., 2011, Shale gas resource plays transforming domestic, global energy pictures: American Oil & Gas Reporter, v. 54, no. 12, p. 74-81.

Kondla, D., H. Sanei, A. Embry, O.H. Ardakani, and C.R. Clarkson, 2015, Depositional environment and hydrocarbon potential of the Middle Triassic strata of the Sverdrup Basin, Canada: International Journal of Coal Geology, v. 147-148, p. 71-84.

Kondla, D., H. Sanei, C.R. Clarkson, O.H. Ardakani, X. Wang, and C. Jiang, 2016, Effects of organic and mineral matter on reservoir quality in a Middle Triassic mudstone in the Canadian Arctic: International Journal of Coal Geology, v. 153, p. 112-126. (phosphate nodules)

Kong, B., E. Fathi, and S. Ameri, 2015, Coupled 3-D numerical simulation of proppant distribution and hydraulic fracturing performance optimization in Marcellus shale reservoirs: International Journal of Coal Geology, v. 147-148, p. 35-45.

Kong, L., M. Wan, Y. Yan, C. Zou, W. Liu, C. Tian, L. Yi, and J. Zhang, 2016, Reservoir diagenesis research of Silurian Longmaxi Formation in Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 203-211.

Kőnitzer, S.F., M.H. Stephenson, S.J. Davies, C.H. Vane, and M.J. Leng, 2016, Significance of sedimentary organic matter input for shale gas generation potential of Mississippian mudstones, Widmerpool Gulf, UK: Review of Palaeobotany and Palynology, v. 224, part II, p. 146-168.

Koottungal, L., 2009, US shale gas surge stimulating construction of processing plants: Oil & Gas Journal, v. 107.1, p. 20-21.

Kostelnik, J., 2010, Geochemistry of the Marcellus Shale—a primer on organic geochemistry: Pennsylvania Geology, v. 40, no. 1, p. 3-13. <http://www.dcnr.state.pa.us/topogeo/pub/pageolmag/pdfs/v40n1.pdf>

Kotarba, M.J., D. Więcław, P. Dziadzio, A. Kowalski, P. Kosakowski, and E. Bilkiewicz, 2014, Organic geochemical study of source rocks and natural gas and their genetic correlation in the eastern part of the Polish Outer Carpathians and Palaeozoic-Mesozoic basement: Marine and Petroleum Geology, v. 56, p. 97-122.

Krűger, M., W. van Berk, E.T. Arning, N. Jiménez, N.H. Schovsbo, N. Straaten, and H.-M. Schulz, 2014, The biogenic methane potential of European gas shale analogues: Results from incubation experiments and thermodynamic modelling: International Journal of Coal Geology, v. 136, p. 59-74.

Kuang, L., D. Dong, W. He, S. Wen, S. Sun, S. Li, Z. Qiu, X. Liao, Y. Li, J. Wu, L. Zhang, Z. Shi, W. Guo, and S. Zhang, 2020, Geological characteristics and development potential of transitional shale gas in the east margin of the Ordos Basin, NW China: Petroleum Exploration and Development, v. 47, no. 3, p. 471-482.

Kuchinskiy, V., 2013, Organic porosity study: Porosity development within organic matter of the Lower Silurian and Ordovician source rocks of the Poland shale gas trend: AAPG Search and Discovery Article #10522, 15 p. <http://www.searchanddiscovery.com/documents/2013/10522kuchinskiy/ndx_kuchinskiy.pdf>

Kuila, U., D.K. McCarty, A. Derkowski, T.B. Fischer, and M. Prasad, 2014, Total porosity measurement in gas shales by the water immersion porosimetry (WIP) method: Fuel, v. 117, p. 1115-1129.

Kuila, U., D.K. McCarty, A. Derkowski, T.B. Fischer, T. Topór, and M. Prasad, 2014, Nano-scale texture and porosity of organic matter and clay minerals in organic-rich mudrocks: Fuel, v. 135, p. 359-373.

Kuhn, J.K., 2011, Constructing a stratigraphic framework for the Mississippian Barnett Shale: northern and central Fort Worth Basin, Texas: Fort Worth, Texas Christian University, unpublished M.S. thesis.

Kulkarni, A., K. Hattori, and A. Desrochers, 2014, Depositional environments of organic-rich calcareous shale in the western Anticosti Basin: the Upper Ordovician Macasty Formation, Quebec, Canada: AAPG Search and Discovery Article 10571, 2 slides (poster) <http://www.searchanddiscovery.com/documents/2014/10571kulkarni/ndx_kulkarni.pdf>

Kulkarni, P., 2010, Developing U.S. shale plays: Marcellus: Arrival of IOCs and increasing legislative interest signal critical mass for Marcellus: World Oil, v. 231, no. 3, p. D-77 to D-86.

Kulkarni, P., 2010, Shale energy: Developing the Haynesville—Mergers and acquisitions support sustained Haynesville drilling: World Oil, v. 231, no. 6, p. D-67 to D-74.

Kulkarni, P., 2010, Shale energy: Developing the Barnett—Barnett activity continuing despite environmental tensions: World Oil, v. 231, no. 8, p. D-87 to D-93.

Kulkarni, P., 2010, Shale energy: developing the Horn River — Independents and IOCs active in Horn River Basin: World Oil, v. 231, no. 10, p. D-101 to D-110.

Kulkarni, P., 2010, Shale search goes global: Shale Energy: Developing International Plays, Special Section, World Oil, v. 231, no. 12, p. D-73 to D-78.

Kulkarni, P., 2011, Shale energy: Developing the Woodford — An unconventional play with conventional E&P constraints: World Oil, v. 232, no. 2, p. D-93 to D-99.

Kulkarni, P., 2011, International fracing controversy stalls European shale: World Oil, v. 232, no. 12, p. 46-52.

Kulkarni, P., 2012, Woodford growing revenues by farming to oily shale: World Oil, v. 233, no. 1, p. 42-49.

Kulkarni, P., 2013, $50 million or bust: Making of the Marcellus: World Oil, v. 234, no. 6, p. 7.

Kulkarni, P., 2013, New shale technologies, best practices: World Oil, v. 234, no. 7, p. S-117.

Kulkarni, P., 2014, Western U.S. looking for the next Bakken or Eagle Ford: World Oil, v. 235, no. 11, p. 80-88.

Kumar, S., S. Das, R. Bastia, and K. Ojha, 2018, Mineralogical and morphological characterization of Older Cambay Shale from North Cambay Basin, India: Implication for shale oil/gas development: Marine and Petroleum Geology, v. 97, p. 339-354.

Kumar, S., V.A. Mendhe, A.D. Kamble, A.K. Varma, D.K. Mishra, M. Bannerjee, J. Buragohain, and A.K. Prasad, 2019, Geochemical attributes, pore structures and fractal characteristics of Barakar shale deposits of Mand-Raigarh Basin, India: Marine and Petroleum Geology, v. 103, p. 377-396.

Kumar, V., C. Sondergeld, and C.S. Rai, 2015, Effect of mineralogy and organic matter on mechanical properties of shale: Interpretation, v. 3, no. 3, p. SV9-SV15. (nanoindentation)

Kuntz, R., J. Ashbaugh, B. Poedjono, J. Zabaldano, I. Shevchenko, and C. Jamerson, 2011, Pad design key for Marcellus drilling: American Oil & Gas Reporter, v. 54, no. 4, p. 111-114.

Kuuskraa, V.A., and D.E. Wicks, 1983, Technically recoverable Devonian Shale gas in Ohio: U.S. Department of Energy Morgantown Energy Technology Center DOE/MC/19239-1525, 101 p.

Kuuskraa, V.A., and D.E. Wicks, 1984, Technically recoverable Devonian Shale gas in West Virginia: U.S. Department of Energy Morgantown Energy Technology Center DOE/MC/19239-1750 (DE85003367), 119 p.

Kuuskraa, V.A., K.B. Sedwick, K.B. Thompson, and D.E. Wicks, 1985, Technically recoverable Devonian Shale gas in Kentucky: U.S. Department of Energy Morgantown Energy Technology Center DOE/MC/19239-1834 (DE85008608), 120 p.

Kuuskraa, V., D.E. Wicks, and J.L. Thurber, 1992, Geologic and reservoir mechanisms controlling gas recovery from the Antrim Shale: SPE Paper 24883, p. 209-224.

Kuuskraa, V.A., G. Koperna, J.W. Schmoker, and J.C. Quinn, 1998, Barnett Shale rising star in Fort Worth Basin: Oil & Gas Journal, v. 96, no. 21, p. 71-76.

Kuuskraa, V.A., 2007, Unconventional gas—1. Reserves, production grew greatly during last decade: Oil & Gas Journal, v. 105.33, p. 35-39.

Kuuskraa, V.A., 2007, Unconventional gas—2. Resource potential estimates likely to change: Oil & Gas Journal, v. 105.35, p. 64-71.

Kuuskraa, V.A., M. Godec, and S.R. Reeves, 2007, Unconventional gas—Conclusion. Outlook sees resource growth during next decade: Oil & Gas Journal, v. 105.43, p. 47-53.

Kuuskraa, V., and S. Stevens, 2009, Gas shale–2: Lessons learned help optimize development: Oil & Gas Journal, v. 107.37, p. 52-57.

Kuuskraa, V.A., 2011, Worldwide assessment underscores vast potential of gas shale resources: American Oil & Gas Reporter, v. 54, no. 5, p. 40-46.

Kuuskraa, V., S. Stevens, T. Van Leeuwen, and K. Moodhe, 2011, World shale gas resources: an initial assessment of 14 regions outside the United States: U.S. Energy Information Administration, 353 p. <http://www.eia.doe.gov/analysis/studies/worldshalegas/>

Labani, M.M., R. Rezaee, A. Saeedi, and A.A. Hinai, 2013, Evaluation of pore size spectrum of gas shale reservoirs using low pressure nitrogen adsorption, gas expansion and mercury porosimetry: a case study from the Perth and Canning Basins, western Australia: Journal of Petroleum Science and Engineering, v. 112, p. 7-16.

Labani, M., and R. Rezaee, 2015, Petrophysical evaluation of gas shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 117-137.

LaBarre, E.A., T.L. Davis, and R.D. Benson, 2008, Finding the sweet spot: Hart Energy Publishing, E&P, v. 81, no. 3, p. 73-74.

Lacazette, A., D. Moos, J.A. Franquet, G. Daniel, and E. Bourtembourg, 2012, Study models Huron stimulation results: American Oil & Gas Reporter, v. 55, no. 5, p. 90-98.

Lacazette, A., J. Vermilye, S. Fereja, and C. Sicking, 2014, Tech trends 2014: Predrill passive method images fracs: American Oil & Gas Reporter, v. 57, no. 1, p. 103-109.

Lacazette, A., C. Sicking, R. Tibi, and A. Fish-Yaner, 2015, Passive seismic methods for unconventional resource development, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 207-244.

LaFollette, R., and G. Schein, 2007, Understanding the Barnett Shale: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 18-21.

LaFollette, R., and H. Brannon, 2010, Process optimizes shale completions: American Oil & Gas Reporter, v. 53, no. 3, p. 97-105.

LaFollette, R., and H. Brannon, 2010, On-site operations optimize completion: American Oil & Gas Reporter, v. 53, no. 5, p. 82-88.

Lai, F., Z. Li, Y. Fu, and C.D. Adenutsi, 2021, Investigating the effects of pore-structure characteristics on porosity and absolute permeability for unconventional reservoirs: Energy Fuels, v. 35, p. 690-701.

Lan, Y., D. Davudov, and R.G. Moghanloo, 2017, Interplay between permeability and compressibility in shale samples: Journal of Petroleum Science and Engineering, v. 159, p. 644-653.

Lan, Y., Z. Yang, P. Wang, Y. Yan, L. Zhang, and J. Ran, 2019, A review of microscopic seepage mechanism for shale gas extracted by supercritical CO2 flooding: Fuel, v. 238, p. 412-424.

Lancaster, D.E., S. McKetta, and P.H. Lowry, 1993, Research findings help characterize Fort Worth Basin’s Barnett Shale: Oil & Gas Journal, v. 91, no. 10, p. 59-64.

Landry, C.J., M. Prodanović, and P. Eichhubl, 2016, Direct simulation of supercritical gas flow in complex nanoporous media and prediction of apparent permeability: International Journal of Coal Geology, v. 159, p. 120-134.

Lane, H.S., D.E. Lancaster, and A.T. Watson, 1990, Estimating gas desorption parameters from Devonian Shale well test data: 1990 SPE Eastern Regional Meeting, Columbus, OH, Oct. 31 – Nov 2, paper SPE 21272.

Larue, D.K., C. Hager, T. Merrifield, G.M. Evola, D. Crane, and P. Yorgensen, 2021, Characterization of five unconventional diatomaceous (opal-A) reservoirs, Monterey Formation, San Joaquin Valley, California: AAPG Bulletin, v. 105, p. 391-436.

Lash, G.G., and T. Engelder, 2009, Tracking the burial and tectonic history of Devonian shale of the Appalachian Basin by analysis of joint intersection style: GSA Bulletin, v. 121, p. 265-277.

Lash, G.G., and T. Engelder, 2011, Thickness trends and sequence stratigraphy of the Middle Marcellus Formation, Appalachian Basin: Implications for Acadian foreland basin evolution: AAPG Bulletin, v. 95, p. 61-103.

Lash, G., and R. Blood, 2012, Molybdenum, uranium, and chloride abundances in the Marcellus Shale—Significance to basin hydrography and organic matter preservation: AAPG Search and Discovery Article #41044, 29 p. <http://www.searchanddiscovery.com/documents/2012/41044lash/ndx_lash.pdf>

Lash, G.G., 2013, Appalachian shales: geology: The Upper Devonian Rhinestreet Shale, in Appalachian shales playbook: Houston, Hart Energy Publishing, p. 16-22.

Lash, G.G., and D.R. Blook, 2014, Organic matter accumulation, redox, and diagenetic history of the Marcellus Formation, southwestern Pennsylvania, Appalachian Basin: Marine and Petroleum Geology, v. 57, p. 244-263.

Lavoie, D., A.P. Hamblin, R. Thériault, J. Beaulieu, D. Kirkwood, 2008, The Upper Ordovician Utica Shales and Lorraine Group flysch in southern Québec: Tectonostratigraphic setting and significance for unconventional gas: Geological Survey of Canada, Open File 5900, 56 p. <http://geopub.nrcan.gc.ca/moreinfo_e.php?id=225728>

Lavoie, D., N. Pinet, J. Dietrich, P. Hannigan, S. Castonguay, A.P. Hamblin, P. Giles, 2009, Petroleum resource assessment, Paleozoic successions of the St. Lawrence Platform and Appalachians of eastern Canada: Geological Survey of Canada, Open File 6174, 275 p. <http://geopub.nrcan.gc.ca/moreinfo_e.php?id=248071>

Lavoie, D., C. Rivard, R. Lefebvre, S. Séjourné, R. Thériault, M.J. Duchesne, J.M.E. Ahad, B. Wang, N. Benoit, and C. Lamontagne, 2014, The Utica Shale and gas play in southern Quebec: Geological and hydrogeological syntheses and methodological approaches to groundwater risk evaluation: International Journal of Coal Geology, v. 126, p. 77-91.

Lavoie, D., N. Pinet, G. Bordeleau, O.H. Ardakani, P. Ladevéze, M.J. Duchesne, C. Rivard, A. Mort, V. Bake, H. Sanei, and X. Malet, 2016, The Upper Ordovician black shales of southern Quebec (Canada) and their significance for naturally occurring hydrocarbons in shallow groundwater: International Journal of Coal Geology, v. 158, p. 44-64.

Lawrence, F.J., 2013, Surveys highlight international trends: American Oil & Gas Reporter, v. 56, no. 4, p. 58-65.

Lawson, B., 2011, Early researchers were key to developing unconventional gas: American Oil & Gas Reporter, v. 54, no. 7, p. 27.

Lawson, B., 2011, Well construction is key to overcoming ‘fracture mania’: American Oil & Gas Reporter, v. 54, no. 9, p. 29.

Lazar, O.R., 2007, Redefinition of the New Albany Shale of the Illinois Basin: An integrated stratigraphic, sedimentologic, and geochemical study: Bloomington, IN, Indiana University, unpublished Ph.D. thesis, 336 p.

Lazar, O.R., K.M. Bohacs, J. Schieber, J.H.S. Macquaker, and T.M. Demko, 2015, Mudstone primer: Lithofacies variations, diagnostic criteria, and sedimentologic/stratigraphic implications at lamina to bedset scale: SEPM, Concepts in Sedimentology and Paleontology 12.

Leathers-Miller, H.M., 2017, Procedure for calculating estimated ultimate recoveries of wells in the Mississippian Barnett Shale, Bend Arch–Fort Worth Basin Province of north-central Texas: U.S. Geological Survey Scientific Investigations Report 2017-5102, 14 p. <https://pubs.er.usgs.gov/publication/sir20175102>

Lee, J.A., B.S.M. Faraj, B.W. McKinstry, and G.R. Sloan, 2002, Drilling program planning and field operations protocols for coalbed methane and shale gas reservoirs in Canada: Des Plaines, Illinois, Gas Technology Institute, GRI-02/0153, 148 p.

Lee, J.A., B.S.M. Faraj, B.W. McKinstry, and G.R. Sloan, 2004, Program planning and field operations protocols for coalbed methane and shale gas reservoirs in Canada: GasTIPS, v. 10, no. 4, p. 18-21.

Legarreta, L., and H.J. Villar, 2011, Geological and geochemical keys of the potential shale resources, Argentina basins: AAPG Search and Discovery Article #80196, 21 p. <http://www.searchanddiscovery.com/documents/2011/80196legarreta/ndx_legarreta.pdf>

Leggett, D., 2011, New drilling fluid saves cost, environment: Hart Energy Publishing, E&P, v. 84, no. 1, p. 75-76. (Haynesville)

Lehman, L.V., 2015, Customized frac stages improve completions in the Bone Spring: American Oil & Gas Reporter, v. 58, no. 8, p. 64-66, 68-69.

Lei, Y., X. Wang, X. Luo, L. Zhang, L. Zhang, C. Jiang, M. Chen, and Y. Yu, 2014, Petrology of siltstone laminae in Zhangjiatan Shale of the 7th Member of Yanchang Formation and their significance for shale gas, Ordos Basin, China: AAPG Search and Discovery Article 80358, 37 slides. <http://www.searchanddiscovery.com/documents/2014/80358lei/ndx_lei.pdf>

Lei, Y., X. Luo, X. Wang, L. Zhang, C. Jiang, W. Yang, Y. Yu, M Cheng, and L. Zhang, 2015, Characteristics of silty laminae in Zhangjiatan Shale of southeastern Ordos Basin, China: Implications for shale gas formation: AAPG Bulletin, v. 99, p. 661-687.

Leija, F., and R.L. Gist, 2013, Shale gas development altering LPG demand, trade: Oil & Gas Journal, v. 111.6, p. 92-97.

Lemke, S.E., 2016, Integration of geosteering and drilling data for well placement efficiency in the Scoop horizontal Woodford play: Houston Geological Society Bulletin, v. 58, no. 8, p. 47-51.

Lemmens, H., and D. Richards, 2013, Multiscale imaging of shale samples in the scanning electron microscope, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 27-35.

Letham, E.A., and R.M. Bustin, 2016, The impact of gas slippage on permeability effective stress laws: Implications for predicting permeability of fine-grained lithologies: International Journal of Coal Geology, v. 167, p. 93-102. (Montney)

Levinthal, J.D., B. Richards, M.S. Snow, M.G. Watrous, and L.W. McDonald IV, 2017, Correlating NORM with the mineralogical composition of shale at the microstructural and bulk scale: Applied Geochemistry, v. 76, p. 210-217.

Levson, V.M., W. Walsh, C. Adams, F. Ferri, and M. Hayes, 2009, An overview of shale gas potential in northeastern British Columbia (extended abstract): CSPG CSEG CWLS Convention, Calgary, Alberta, Canada, abstracts, p. 561-563. <http://www.geoconvention.org/2009abstracts/236.pdf>

Lewan, M.D., and M.J. Pawlewicz, 2017, Reevaluation of thermal maturity and stages of petroleum formation of the Mississippian Barnett Shale, Fort Worth Basin, Texas: AAPG Bulletin, v. 101, p. 1945-1970.

Lewin and Associates, Inc., 1983, Technically recoverable Devonian Shale gas in Ohio: U.S. Department of Energy Morgantown Energy Technology Center DOE/MC/19239-1525 (DE84003057), 101 p.

Lewis, E., M. Behling, and S. Pool, 2011, An overview of Marcellus and other Devonian shale production in West Virginia: AAPG Search and Discovery Article #10372, 50 p. <http://www.searchanddiscovery.com/documents/2011/10372lewis/ndx_lewis.pdf>

Lewis, G., and K. Perry, 2011, R&D areas key to improving fracturing: American Oil & Gas Reporter, v. 54, no. 12, p. 83-88.

Lewis, G., T. Russell, and N. Eckersley, 2014, Processing solutions enable economic development of highly variable shale plays: American Oil & Gas Reporter, v. 57, no. 3, p. 98-104.

Lewis, I., 2013, South Africa beckons as the continent’s new frontier: World Oil, v. 234, no. 4, p. 169-172.

Lewis, I., 2013, International countries make push for domestic reserves: World Oil, v. 234, no. 12, p. 78-86.

Li, A., W. Ding, J. He, P. Dai, S. Yin, and F. Xie, 2016, Investigation of pore structure and fractal characteristics of organic-rich shale reservoirs: A case study of Lower Cambrian Qiongzhusi Formation in Malong block of eastern Yunnan Province, south China: Marine and Petroleum Geology, v. 70, p. 46-57.

Li, A., W. Ding, K. Jiu, Z. Wang, R. Wang, and J. He, 2018, Investigation of the pore structures and fractal characteristics of marine shale reservoirs using NMR experiments and image analyses: A case study of the Lower Cambrian Niutitang Formation in northern Guizhou Province, South China: Marine and Petroleum Geology, v. 89, p. 530-540.

Li, B., Y. Su, X. Li, W. Wang, M.M. Husein, and R. Aguilera, 2019, Temporal scale analysis of shale gas dynamic coupling flow: Fuel, v. 239, p. 587-600.

Li, D., R. Li, C. Tan, D. Zhao, T. Xue, B. Zhao, A. Khaled, F. Liu, and F. Xu, 2019, Origin of silica, paleoenvironment, and organic matter enrichment in the Lower Paleozoic Niutitang and Longmaxi formations of the northwestern Upper Yangtze Plate: Significance for hydrocarbon exploration: Marine and Petroleum Geology, v. 103, p. 404-421.

Li, F., M. Wang, S. Liu, and Y. Hao, 2019, Pore characteristics and influencing factors of different types of shales: Marine and Petroleum Geology, v. 102, p. 391-401.

Li, H., H. Tang, and M. Zheng, 2019, Micropore structural heterogeneity of siliceous shale reservoir of the Longmaxi Formation in the southern Sichuan Basin, China: Minerals, v. 9, 20 p.

Li, J., X. Yan, W. Wang, Y. Zhang, J. Yin, S. Lu, F. Chen, Y. Meng, X. Zhang, X. Chen, Y. Yan, and J. Zhu, 2015, Key factors controlling the gas adsorption capacity of shale: A study based on parallel experiments: Applied Geochemistry, v. 58, p. 88-96.

Li, J., J. Yin, Y. Zhang, S. Lu, W. Wang, J. Li, F. Chen, and Y. Meng, 2015, A comparison of experimental methods for describing shale pore features — A case study in the Bohai Bay Basin of eastern China: International Journal of Coal Geology, v. 152, Part B, p. 39-49.

Li, J., S. Zhou, Y. Li, Y. Ma, Y. Yang, and C. Li, 2016, Effect of organic matter on pore structure of mature lacustrine organic-rich shale: A case study of the Triassic Yanchang shale, Ordos Basin, China: Fuel, v. 185, p. 421-431.

Li, J., X. Li, X. Wang, Y. Li, K. Wu, J. Shi, L. Yang, D. Feng, T. Zhang, and P. Yu, 2016, Water distribution characteristic and effect on methane adsorption capacity in shale clay: International Journal of Coal Geology, v. 159, p. 135-154.

Li, J., X. Li, K. Wu, D. Feng, T. Zhang, and Y. Zhang, 2017, Thickness and stability of water film confined inside nanoslits and nanocapillaries of shale and clay: International Journal of Coal Geology, v. 179, p. 253-268.

Li, J., K. Huang, Y. Zhang, Y. Ma, J. Yin, S. Lu, H. Xue, J. Li, and J. Yang, 2017, Chemical and isotopic fractionation of shale gas during adsorption and desorption: Journal of Nanoscience and Nanotechnology, v. 17, p. 6395-6403.

Li, J., S. Zhou, G. Gaus, Y. Li, Y. Ma, K. Chen, and Y. Zhang, 2018, Characterization of methane adsorption on shale and isolated kerogen from the Sichuan Basin under pressure up to 60 MPa: Experimental results and geological implications: International Journal of Coal Geology, v. 189, p. 83-93.

Li, J., Q. Wu, W. Jin, J. Lu, and Z. Nan, 2019, Logging evaluation of free-gas saturation and volume content in Wufeng-Longmaxi organic-rich shales in the Upper Yangtze Platform, China: Marine and Petroleum Geology, v. 100, p. 530-539.

Li, J., S. Wang, S. Lu, P. Zhang, J. Cai, J. Zhao, and W. Li, 2019, Microdistribution and mobility of water in gas shale: A theoretical and experimental study: Marine and Petroleum Geology, v. 102, p. 496-507.

Li, J., S. Lu, G. Chen, M. Wang, S. Tian, and Z. Guo, 2019, A new method for measuring shale porosity with low-field nuclear magnetic resonance considering non-fluid signals: Marine and Petroleum Geology, v. 102, p. 535-543. (NMR)

Li, L., J. Tan, D.A. Wood, Z. Zhao, D. Becker, Q. Lyu, B. Shu, and H. Chen, 2019, A review of the current status of induced seismicity monitoring for hydraulic fracturing in unconventional tight oil and gas reservoirs: Fuel, v. 242, p. 195-210.

Li, M., G. Yin, J. Xu, J. Cao, and Z. Song, 2016, Permeability evolution of shale under anisotropic true triaxial stress conditions: International Journal of Coal Geology, v. 165, p. 142-148.

Li, P., M.E. Ratchford, and D.M. Jarvie, 2010, Geochemistry and thermal maturity analysis of the Fayetteville Shale and Chattanooga Shale in the western Arkoma Basin of Arkansas: Arkansas Geological Survey, Information Circular 40, 205 p., CD-ROM.

Li, P., C. Zhang, X. Tang, Z.P. Huo, Z. Li, K.Y. Luo, and Z.M. Li, 2020, Assessment of shale gas potential of the lower Permian transitional Shanxi-Taiyuan shales in the southern North China Basin: Australian Journal of Earth Sciences. <https://doi.org/10.1080/08120099.2020.1762737>

Li, S., Y. Yuan, W. Sun, D. Sun, and Z. Jin, 2016, Formation and destruction mechanism as well as major controlling factors of the Silurian shale gas overpressure in the Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 287-294.

Li, S., Q. Sang, M. Dong, and P. Luo, 2019, Determination of inorganic and organic permeabilities of shale: International Journal of Coal Geology, v. 215, 103296.

Li, T., H. Song, J. Wang, Y. Wang, and J. Killough, 2016, An analytical method for modeling and analysis gas-water relative permeability in nanoscale pores with interfacial effects: International Journal of Coal Geology, v. 159, p. 71-81.

Li, T., H. Tian, J. Chen, and L. Cheng, 2016, Application of low pressure gas adsorption to the characterization of pore size distribution of shales: An example from southeastern Chongqing area, China: Journal of Natural Gas Geoscience, v. 1, p. 221-230.

Li, T., H. Tian, X. Xiao, P. Cheng, Q. Zhou, and Q. Wei, 2017, Geochemical characterization and methane adsorption capacity of overmature organic-rich Lower Cambrian shales in northeast Guizhou region, southwest China: Marine and Petroleum Geology, v. 86, p. 858-873.

Li, W., S. Lu, H. Xue, P. Zhang, and Y. Hu, 2016, Microscopic pore structure in shale reservoir in the argillaceous dolomite from the Jianghan Basin: Fuel, v. 181, p. 1041-1049.

Li, W., L.A. Stevens, C.N. Uguna, C.H. Vane, W. Meredith, L. Tang, Q. Li, and C.E. Snape, 2021, Comparison of the impact of moisture on methane adsorption and nanoporosityfor over mature shales and their kerogens: International Journal of Coal Geology, v. 237, 103705.

Li, X., B.M. Krooss, P. Weniger, and R. Littke, 2015, Liberation of molecular hydrogen (H2) and methane (CH4) during non-isothermal pyrolysis of shales and coals: Systematics and quantification: International Journal of Coal Geology, v. 137, p. 152-164.

Li, X., Q. Wang, W. Zhang, and H. Yin, 2016, Contact metamorphism of shales intruded by a granite dike: Implications for shale gas preservation: International Journal of Coal Geology, v. 159, p. 96-106.

Li, X., J. Zhang, Y. Wang, P. Zhao, Z. Wang, H. Xu, G. Wang, and F. Wang, 2016, Accumulation conditions of Lower Paleozoic shale gas from the southern Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 101-108.

Li, X., Y. Wang, J. Zhang, M. Guo, P. Zhao, H. Xu, J. Yang, and F. Wang, 2016, Pore characteristics of shale gas reservoirs from the Lower Paleozoic in the southern Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 195-202.

Li, X., G. Chen, Z. Chen, L. Wang, Y. Wang, D. Dong, Z. Lű, W. Lű, S. Wang, J. Huang, and C. Zhang, 2016, An insight into the mechanism and evolution of shale reservoir characteristics with over-high maturity: Journal of Natural Gas Geoscience, v. 1, p. 373-382.

Li, X., B.M. Krooss, C. Ostertag-Henning, P. Weniger, and R. Littke, 2018, Liberation of hydrogen-containing gases during closed system pyrolysis of immature organic matter-rich shales: International Journal of Coal Geology, v. 185, p. 23-32.

Li, X., J. Zhang, Y. Wang, M. Guo, Z. Wang, and F. Wang, 2018, Accumulation condition and favorable area evaluation of shale gas from the Niutitang Formation in northern Guizhou, South China: Journal of Natural Gas Geoscience, v. 3, p. 1-10.

Li, X., H. Zhu, K. Zhang, Z. Li, Y. Yu, X. Feng, and Z. Wang, 2021, Pore characteristics and pore structure deformation evolution of ductile deformed shales in the Wufeng-Longmaxi Formation, southern China: Marine and Petroleum Geology, v. 127, 104992.

Li, Y., J. Schieber, T. Fan, and X. Wei, 2018, Pore characterization and shale facies analysis of the Ordovician-Silurian transition of northern Guizhou, south China: The controls of shale facies on pore distribution: Marine and Petroleum Geology, v. 92, p. 697-718. (no pores in graptolites)

Li, Y., J. Xia, and Z. Song, 2019, A comparison study on hydrocarbon composition in bitumens I and II from Lower Cambrian marine shales in Guizhou Province, south China: Fuel, v. 243, p. 332-341.

Li, Z., Z. Jiang, Z. Liang, H. Yu, and Y. Yang, 2019, Pore-structure characterization of tectonically deformed shales: a case study of Wufeng-Longmaxi Formaiton in western Hunan Province, southern China: Australian Journal of Earth Sciences.

Li, Z., Z. Jiang, H. Yu, and Z. Liang, 2019, Organic matter pore characterization of the Wufeng-Longmaxi shales from the Fuling gas field, Sichuan Basin: Evidence from organic matter isolation and low-pressure CO2 and N2 adsorption: Energies, 12, 1207, 15 p.

Li, Z., H. Xu, and C. Zhang, in press, Liquid nitrogen gasification fracturing technology for shale gas development: Journal of Petroleum Science and Engineering. (liquid nitrogen gasification fracturing technology)

Liang, C., Z. Jiang, Y. Cao, M. Wu, L. Guo, and C. Zhang, 2016, Deep-water depositional mechanisms and significance for unconventional hydrocarbon exploration: A case study from the lower Silurian Longmaxi shale in the southeastern Sichuan Basin: AAPG Bulletin, v. 100, p. 773-794.

Liang, C., Y. Cao, K. Liu, Z. Jiang, J. Wu, and F. Hao, 2018, Diagenetic variation at the lamina scale in lacustrine organic-rich shales: Implications for hydrocarbon migration and accumulation: Geochimica et Cosmochimica Acta, v. 229, p. 112-128.

Liang, L., Y. Ding, and X. Liu, 2016, Shear test, stress analysis predict collapsing pressure in China’s Liushagang shale: Oil and Gas Journal, v. 114.2, p. 52-56.

Liang, M., Z. Wang, L. Gao, C. Li, and H. Li, 2017, Evolution of pore structure in gas shale related to structural deformation: Fuel, v. 197, p. 310-319.

Lin, K., X. Huang, and Y.-P. Zhao, 2020, Combining image recognition and simulation to reproduce the adsorption/desorption behaviors of shale gas: Energy & Fuels, v. 34, p. 258-269.

Lin, L., Y. Yu, C. Zhai, Y. Li, Y. Wang, G. Liu, Y. Guo, and J. Gao, 2018, Paleogeography and shale development characteristics of the Late Permian Longtan Formation in southeastern Sichuan Basin, China: Marine and Petroleum Geology, v. 95, p. 67-81.

Lindsay, G., G. Miller, T. Xu, D. Shan, and J. Baihly, 2018, Enhanced understanding improves “child well” performance: World Oil, v. 239, no. 8, p. 53-58.

Liner, C., 2010, Exploring shale gas plays: World Oil, v. 231, no. 5, p. 15.

Liner, C., 2010, Rolling the dice in the shale plays: World Oil, v. 231, no. 8, p. 15. (Haynesville Shale)

Liner, C., 2010, Snap, crackle, pop: World Oil, v. 231, no. 11, p. 17. (microseismic)

Liu, B., J. Schieber, and M. Mastalerz, 2018, Combined SEM and reflected light petrography of organic matter in the New Albany Shale (Devonian-Mississippian) in the Illinois Basin: A perspective on organic pore development with thermal maturation: International Journal of Coal Geology, v. 184, p. 57-72.

Liu, B., J. Schieber, M. Mastalerz, and J. Teng, 2019, Organic matter content and type variation in the sequence stratigraphic context of the Upper Devonian New Albany Shale, Illinois Basin: Sedimentary Geology, v. 383, p. 101-120.

Liu, B., 2020, Organic matter accumulation, thermal maturation, and organic pores development in the Upper Devonian New Albany Shale, Illinois Basin: Bloomington, Indiana University, unpublished PhD dissertation, 191 p.

Liu, B., J. Schieber, M. Mastalerz, and J. Teng, 2020, Variability of rock mechanical properties in the sequence stratigraphic context of the Upper Devonian New Albany Shale, Illinois Basin: Marine and Petroleum Geology, v. 112, 104068.

Liu, B., M. Mastalerz, J. Schieber, and J. Teng, 2020, Association of uranium with macerals in marine black shales: Insights from the Upper Devonian New Albany Shale, Illinois Basin: International Journal of Coal Geology, v. 117, 103351. (AOM)

Liu, D., H. Li, C. Zhang, Q. Wang, and P. Peng, 2019, Experimental investigation of pore development of the Chang 7 member shale in the Ordos basin under semi-closed high-pressure pyrolysis: Marine and Petroleum Geology, v. 99, p. 17-26.

Liu, D., Z. Li, Z. Jiang, C. Zhang, Z. Zhang, J. Wang, D. Yang, Y. Song, and Q. Luo, 2019, Impact of laminae on pore structures of lacustrine shales in the southern Songliao Basin, NE China: Journal of Asian Earth Sciences, v. 182, 14 p.

Liu, G., G. Zhai, C. Zou, L. Cheng, X. Guo, X. Xia, D. Shi, Y. Yang, C. Zhang, and Z. Zhou, 2019, A comparative discussion of the evidence for biogenic silica in Wufeng-Longmaxi siliceous shale reservoir in the Sichuan Basin, China: Marine and Petroleum Geology, v. 109, p. 70-87.

Liu, H., S. Zhang, G. Song, W. Xuejun, J. Teng, M. Wang, Y. Bao, S. Yao, W. Wang, S. Zhang, Q. Hu, and Z. Fang, 2019, Effect of shale diagenesis on pores and storage capacity in the Paleogene Shahejie Formation, Dongying Depression, Bohai Bay Basin, east China: Marine and Petroleum Geology, v. 103, p. 738-752.

Liu, J., W. Ding, R. Wang, S. Yin, H. Yang, and Y. Gu, 2017, Simulation of paleotectonic stress fields and quantitative prediction of multi-period fractures in shale reservoirs: A case study of the Niutitang Formation in the Lower Cambrian in the Cen’gong block, south China: Marine and Petroleum Geology, v. 84, p. 289-310.

Liu, J., P. Li, Z. Sun, Z. Lu, Z. Du, H. Liang, and D. Lu, 2017, A new method for analysis of dual pore size distributions in shale using nitrogen adsorption measurements: Fuel, v. 210, p. 446-454.

Liu, J., Y. Yao, D. Liu, and D. Elsworth, 2017, Experimental evaluation of CO2 enhanced recovery of adsorbed-gas from shale: International Journal of Coal Geology, v. 179, p. 211-218.

Liu, J., W. Ding, R. Wang, H. Yang, X. Wang, and A. Li, 2018, Correlation analysis of element contents and mechanical characteristics of shale reservoirs: A case study in the Cen’gong block, South China: Marine and Petroleum Geology, v. 91, p. 19-28. (see Zhang and others, 2020)

Liu, J., Z.-L. He, X.-W. Liu, Z.-Z. Huo, and P. Guo, 2019, Using frequency-dependent AVO inversion to predict the “sweet spots” of shale gas reservoirs: Marine and Petroleum Geology, v. 102, p. 283-291.

Liu, J., H. Xie, Q. Wang, S. Chen, and Z. Hu, 2019, The effect of pore size on shale gas recovery with CO2 sequestration: Insight into molecular mechanisms: Energy & Fuels, v. 33, p. 2897-2907.

Liu, K., S. Zhang, S. Liu, and H. Tian, 2015, Molecular simulation of gas adsorption in minerals and coal: Implications for gas occurrence in shale gas reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 325-339.

Liu, K., N. Zakharova, T. Gentzis, A. Adeyilola, H. Carvajal-Ortiz, and H. Fowler, 2020, Microstucture characterization of a biogenic shale gas formation—Insights from the Antrim Shale, Michigan Basin: Journal of Earth Science.

Liu, M., and G. Gadikota, 2018, Probing the influence of thermally induced structural changes on the microstructural evolution in shale using multiscale X-ray scattering measurements: Energy & Fuels, v. 32, p. 8193-8201.

Liu, Q., Z. Jin, X. Wang, J. Yi, Q. Meng, X. Wu, B. Gao, H. Nie, and D. Zhu, 2018, Distinguishing kerogen and oil cracked shale gas using H, C-isotopic fractionation of alkane gases: Marine and Petroleum Geology, v. 91, p. 350-362.

Liu, R., 2016, Features of the first great shale gas field in China: Journal of Natural Gas Geoscience, v. 1, p. 109-118.

Liu, R., Z. Liu, P. Sun, X. Yang, and C. Zhang, 2017, Shale gas accumulation potential of the Upper Cretaceous Qingshankou Formation in the southeast Songliao Basin, NE China: Marine and Petroleum Geology, v. 86, p. 547-562.

Liu, R., F. Hao, T. Engelder, Z. Shu, J. Yi, S. Xu, and C. Teng, 2019, Stress memory extracted from shale in the vicinity of a fault zone: Implications for shale-gas retention: Marine and Petroleum Geology, v. 102, p. 340-349.

Liu, R., F. Hao, T. Engelder, Z. Shu, J. Yi, S. Xu, and C. Teng, 2020, Influence of tectonic exhumation on porosity of Wufeng–Longmaxi shale in the Fuling gas field of the eastern Sichuan Basin, China: AAPG Bulletin, v. 104, p. 939-959.

Liu, S., 2011, Geochemical characterization and comparison of condensates from the Barnett Shale, Fort Worth Basin, Texas and the Woodford Shale, Arkoma Basin, Oklahoma: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 170 p.

Liu, S., A. Zett, D. Spain, M. Rabinovich, T. Gillham, A. Gangopadhyay, J. Lucas, Q. Zhou, and A. Gysen, 2014, Multidisciplinary approach in determining the best zone to land a Haynesville horizontal well: Interpretation, v. 2, no. 4, p. T243-T254.

Liu, S., R. Zhang, Z. Karpyn, H. Yoon, and T. Dewers, 2019, Investigation of accessible pore structure evolution under pressurization and adsorption for coal and shale using small-angle neutron scattering: Energy & Fuels, v. 33, p. 837-847.

Liu, S., and R. Zhang, 2020, Anisotropic pore structure of shale and gas injection-induced nanopore alteration: A small-angle neutron scattering study: International Journal of Coal Geology, v. 219, 103384. (Marcellus)

Liu, W., J. Wu, H. Jiang, Z. Zhou, C. Luo, W. Wu, X. Li, S. Liu, and B. Deng, 2021, Cenozoic exhumation and shale-gas enrichment of the Wufent-Longmaxi formation in the southern Sichuan basin, western China: Marine and Petroleum Geology, v. 125, 104865.

Liu, X., Y. Ding, and L. Ya, 2017, Index measures brittleness in China’s Longmaxi shale: Oil & Gas Journal, v. 115.2, p. 45-51.

Liu, Y., J. Zhang, and X. Tang, 2016, Predicting the proportion of free and adsorbed gas by isotopic geochemical data: A case study from lower Permian shale in the southern North China Basin (SNCB): International Journal of Coal Geology, v. 156, p. 25-35.

Liu, Y., Y. Xiong, Y. Li, and P. Peng, 2017, Effects of oil expulsion and pressure on nanopore development in highly mature shale: Evidence from a pyrolysis study of the Eocene Maoming oil shale, south China: Marine and Petroleum Geology, v. 86, p. 526-536.

Liu, Y., H.A. Li, Y. Tian, Z. Jin, and H. Deng, 2018, Determination of the absolute adsorption/desorption isotherms of CH4 and n-C4H10 on shale from a nano-scale perspective: Fuel, v. 218, p. 67-77.

Liu, Y., Y. Xiong, Y. Li, and P. Peng, 2018, Effect of thermal maturation on chemical structure and nanomechanical properties of solid bitumen: Marine and Petroleum Geology, v. 92, p. 780-793.

Liu, Y., J. Zhang, P. Zhang, Z. Liu, P. Zhao, H. Huang, X. Tang, and X. Mo, 2018, Origin and enrichment factors of natural gas from the Lower Silurian Songkan Formation in northern Guizhou province, south China: International Journal of Coal Geology, v. 187, p. 20-29.

Liu, Y., Y. Yao, D. Liu, S. Zheng, G. Sun, and Y. Chang, 2018, Shale pore size classification: An NMR fluid typing method: Marine and Petroleum Geology, v. 96, p. 591-601.

Liu, Y., X. Tang, J. Zhang, X. Mo, H. Huang, and Z. Liu, 2018, Geochemical characteristics of the extremely high thermal maturity transitional shale gas in the Southern North China Basin (SNCB) and its differences with marine shale gas: International Journal of Coal Geology, v. 194, p.

Liu, Y., and J. Hou, 2019, Investigation on the potential relationships between geophysical properties and CH4 adsorption in a typical shale gas reservoir: Energy & Fuels, v. 33, p. 8354-8362.

Liu, Y., Y. Xiong, K. Liu, C. Yang, and P. Peng, 2019, Indentation size and loading rate sensitivities on mechanical properties and creep behavior of solid bitumen: International Journal of Coal Geology, v. 216, 103295.

Liu, Z., D. Liu, Y. Cai, Y. Yao, Z. Pan, and Y. Zhou, 2020, Application of nuclear magnetic resonance (NMR) in coalbed methane and shale reservoirs: A review: International Journal of Coal Geology, v. 218, 103261.

Liu, Z., S. Guo, and R. Lv, 2020, Shale-gas play risk of the lower Cambrian on the Yangtze platform, south China: AAPG Bulletin, v. 104, p. 989-1009.

Lobato, F.S., 2011, Shale gas, oil, minerals processing offer synergies in Brazil’s Amazon basins: Oil & Gas Journal, v. 109, no. 10, p. 54-67.

Logan, D., 2016, Assimilation of drilling data produces reliable, cost-effective, engineered completions: World Oil, v. 237, no. 3, p. 70-74.

Lohoefer, D., J. Athans, and R. Seale, 2007, Completion improves horizontal wells: American Oil & Gas Reporter, v. 50, no. 3, p. 96-103.

Lohr, C.D., B.J. Valentine, P.C. Hackley, and F.T. Dulong, 2020, Characterization of the unconventional Tuscaloosa marine shale reservoir in southwestern Mississippi, USA: Insights from optical and SEM petrography: Marine and Petroleum Geology, v. 121, 104580.

Lőhr, S.C., E.T. Baruch, P.A. Hall, and M.J. Kennedy, 2015, Is organic pore development in gas shales influenced by the primary porosity and structure of thermally immature organic matter?: Organic Geochemistry, v. 87, p. 119-132.

Lo Mónaco Carías, G.A., 2012, Characterization of the Mississippian Barnett Shale Formation well, using organic geochemistry parameters and their relationship with different lithofacies, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 106 p.

Long, S., D. Feng, F. Li, and W. Du, 2018, Prospect analysis of the deep marine shale gas exploration and development in the Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 3, p. 181-189.

Longbottom, T.L., W.C. Hockaday, H. Daigle, and O.R. Harvey, 2020, Organic chemical structure relationships to maturity and stability in shales: International Journal of Coal Geology, v. 223, 103448.

Longman, M., 2007, Lithology and characteristics of the Upper Cretaceous Baxter Shale gas reservoir, Vermillion Basin, northwest Colorado and adjacent Wyoming: RMAG Outcrop, v. 56, no. 10, p. 21.

Loucks, R.G., and S.C. Ruppel, 2007, Mississippian Barnett Shale: Lithofacies and depositional setting of a deep-water shale-gas succession in the Fort Worth Basin, Texas: AAPG Bulletin, v. 91, p. 579-601.

Loucks, R.G., R.M. Reed, S.C. Ruppel, and D.M. Jarvie, 2009, Morphology, genesis, and distribution of nanometer-scale pores in siliceous mudstones of the Mississippian Barnett Shale: Journal of Sedimentary Research, v. 79, p. 848-861.

Loucks, R.G., R.M. Reed, S.C. Ruppel, and U. Hammes, 2010, Preliminary classification of matrix pores in mudrocks: Gulf Coast Association of Geological Societies Transactions, v. 60, p. 435-441.

Loucks, R.G., R.M. Reed, S.C. Ruppel, and U. Hammes, 2012, Spectrum of pore types and networks in mudrocks and a descriptive classification for matrix-related mudrock pores: AAPG Bulletin, v. 96, p. 1071-1098.

Loucks, R.G., and R.M. Reed, 2014, Scanning-electron-microscope petrographic evidence for distinguishing organic matter pores associated with in-place organic matter versus migrated organic matter in mudrocks: Gulf Coast Association of Geological Societies Journal, v. 3, p. 51-60.

Loucks, R.G., and R.M. Reed, 2016, Natural microfractures in unconventional shale-oil and shale-gas systems: Real, hypothetical, or wrongly defined?: Gulf Coast Association of Geological Societies Journal, v. 5, p. 64-72.

Loucks, R.G., S.C. Ruppel, X. Wang, L. Ko, S. Peng, T. Zhang, H.D. Rowe, and P. Smith, 2017, Pore types, pore-network analysis, and pore quantification of the lacustrine shale-hydrocarbon system in the Late Triassic Yanchang Formation in the southeastern Ordos Basin, China: Interpretation, v. 5, no. 2, p. SF63-SF79.

Lowe, T., M. Potts, and D. Wood, 2014, Project illustrates benefits of comprehensive monitoring for improved fracturing operations: American Oil & Gas Reporter, v. 57, no. 9, p. 78-89. (Cana Woodford)

Lowry, J., V. Yeager, M. Ritchie, and B.H. Lloyd, 2011, Haynesville trial well applies environmentally focused shale technologies: World Oil, v. 232, no. 12, p. 39-42.

Lowry, P.H., T. Hamilton-Smith, and R.W. Brown, 1991, Geological strategy for identifying areas of higher gas production potential in the Devonian shales of the Appalachian Basin: Des Plaines, Illinois, Gas Technology Institute, GRI-90/0223, 132 p.

Lu, J., T.E. Larson, and R.C. Smyth, 2015, Carbon isotope effects of methane transport through Anahuac Shale—A core gas study: Journal of Geochemical Exploration, v. 148, p. 138-149.

Lu, J., S.C. Ruppel, and H.D. Rowe, 2015, Organic matter pores and oil generation in the Tuscaloosa marine shale: AAPG Bulletin, v. 99, p. 333-357.

Lu, J., P.J. Mickler, J.-P. Nicot, W. Choi, W.L. Esch, and R. Darvari, 2017, Geochemical interactions of shale and brine in autoclave experiments—Understanding mineral reactions during hydraulic fracturing of Marcellus and Eagle Ford shales: AAPG Bulletin, v. 101, p. 1567-1597.

Lu, X.C., F.C. Li, and A.T. Watson, 1995, Adsorption measurements in Devonian shales: Fuel, v. 74, p. 599-603.

Lu, Y., S. Jiang, Y. Lu, S. Xu, Y. Shu, and Y. Wang, 2019, Productivity or preservation? The factors controlling the organic matter accumulation in the late Katian through Hirnantian Wufeng organic-rich shale, south China: Marine and Petroleum Geology, v. 109, p. 22-35.

Lu, Y., F. Hao, Y. Lu, D. Yan, S. Xu, Z. Shu, Y. Wang, and L. Wu, 2020, Lithofacies and depositional mechanisms of the Ordovician-Silurian Wufeng-Longmaxi organic-rich shales in the Upper Yangtze area, southern China: AAPG Bulletin, v. 104, p. 97-129.

Lucier, A.M., R. Hofmann, and L.T. Bryndzia, 2011, Evaluation of variable gas saturation on acoustic log data from the Haynesville Shale gas play, NW Louisiana, USA: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 300-311.

Lűders, V., and B. Plessen, 2015, Stable carbon isotope ratios of CH4-rich gas inclusions in shale-hosted fracture-fill mineralization: A tool for tracing hydrocarbon generation and migration in shale plays for oil and gas: Marine and Petroleum Geology, v. 63, p. 68-81.

Luffel, D.L. and F.K. Guidry, 1989, Reservoir rock properties of Devonian Shale from core and log analysis: Society of Core Analysts Annual Symposium, New Orleans, LA, paper 8910.

Luffel, D.L., J. Lorenzen, J.B. Curtis, and P.F. Low, 1991, Formation evaluation technology for production enhancement: Des Plaines, Illinois, Gas Technology Institute, GRI-91/0376, 173 p.

Luffel, D.L. and F.K. Guidry, 1992, New core analysis methods for measuring reservoir rock properties of Devonian Shale: Journal of Petroleum Technology, v. 44, p. 1,184-1,190.

Lukosavich, N., and D.M. Cohen, 2011, Expanding Marcellus activity defies gas prices: World oil, v. 232, no. 4, p. 58-71.

Lukosavich, N., 2011, Regional report China: World Oil, v. 232, no. 12, p. 58-64.

Luo, C., N. Yin, H. Lin, X. Gao, J. Wang, and H. Zhu, 2020, Reservoir characteristics of the Lower Silurian Longmaxi Shale in Zhaotong Region, southern China: Geofluids, v. 2020, article 8872244.

Luo, G., N. Zhong, N. Dai, and W. Zhang, 2016, Graptolite-derived organic matter in the Wufeng-Longmaxi Formations (Upper Ordovician–Lower Silurian) of southeastern Chongqing, China: Implications for gas shale evaluation: International Journal of Coal Geology, v. 153, p. 87-98.

Luo, W., M. Hou, X. Liu, S. Huang, H. Chao, R. Zhang, and X. Deng, 2018, Geological and geochemical characteristics of marine-continental transitional shale from the Upper Permian Longtan Formation, northwestern Guizhou, China: Marine and Petroleum Geology, v. 89, p. 58-67.

Luo, X., S. Wang, Z. Wang, Z. Jing, M. Lv, Z. Zhai, and T. Han, 2015, Adsorption of methane, carbon dioxide and their binary mixtures on Jurassic shale from the Qaidam Basin in China: International Journal of Coal Geology, v. 150-151, p. 210-223.

Luo, X., X. Ren, and S. Wang, 2019, Supercritical CO2-water-shale interactions and their effects on element mobilization and shale pore structure during stimulation: International Journal of Coal Geology, v. 202, p. 109-127.

Lutgert, J., R. Greiss, C. Hughes, and S. Large, 2014, Defining shale potential in the Netherlands: GEOExPro, v. 11, no. 3.

Lyle, D., 2007, Shale gas plays expand: Hart Energy Publishing, E&P, v. 80, no. 3, p. 77-79.

Lyle, D., 2007, Raid shales for long-term reserves: Hart Energy Publishing, E&P, v. 80, no. 4, p. 147.

Lyle, D., 2009, Haynesville vies for top gas shale: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 28-34.

Lyle, D., 2009, Arkoma Basin players test technology: Houston, Hart Energy Publishing, Arkoma playbook, p. 14-31.

Lyle, D., 2009, Marcellus draws a crowd: Houston, Hart Energy Publishing, Marcellus Playbook, p. 22-25.

Lyle, D., 2009, Barnett numbers tell the tale: Houston, Hart Energy Publishing, Barnett Playbook, p. 16-42.

Lyle, D., 2010, Eagle Ford joins shale boom: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 22-44.

Lyle, D., 2010, Permian reveals unconventional plays: Houston, Hart Energy Publishing, Permian Basin: the playbook, p. 30-52.

Lyle, D., 2011, Shales revive oilpatch, gas patch: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 14-68.

Lyle, D., 2011, Industry accelerates Eagle Ford campaign: Houston, Hart Energy Publishing, Eagle Ford Shale 2011 Playbook, p. 20-53.

Lyle, D., 2011, Marcellus moves to prime time: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 22-56.

Lyle, D., 2012, A giant emerges in shale country, in Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, p. 18-60.

Lyle, D., 2012, Canadian shales pound profit path, in Canada playbook: Houston, Hart Energy Publishing, p. 12-48.

Lyle, D., 2013, World unconventional development gains strength, in Global unconventional yearbook: Houston, Hart Energy Publishing, p. 26-43.

Lyle, D., 2013, Midcontinent pushes oil shale boom, in Midcontinent playbook: Houston, Hart Energy Publishing, p. 16-56.

Lyle, D., 2013, Appalachian shales: overview: Operators enjoy copious gas and some liquids too, in Appalachian shales playbook: Houston, Hart Energy Publishing, p. 4-14.

Lyle, D., 2013, Appalachian shales: key players: Liquids action drives Appalachian profits, in Appalachian shales playbook: Houston, Hart Energy Publishing, p. 24-63.

Lyle, D., 2014, Rockies tight sands and shales: key players: Horizontals crack Rockies’ challenge, in Rockies tight sands and shales playbook: Houston, Hart Energy Publishing, p. 20-51.

Lyle, D., 2014, TMS sparks Eagle Ford visions, in Tuscaloosa Marine Shale playbook: Houston, Hart Energy Publishing, p. 12-22.

Lyle, D., 2015, Playmakers lead resource action, in North American unconventional yearbook: Houston, Hart Energy Publishing, p. 22-90.

Lyu, Q., P.G. Ranjith, X. Long, Y. Kang, and M. Huang, 2015, A review of shale swelling by water adsorption: Journal of Natural Gas Science and Engineering, v. 27, p. 1421-1431.

Ma, L., K.G. Taylor, P.J. Dowey, L. Courtois, A. Gholinia, and P.D. Lee, 2017, Multi-scale 3D characterization of porosity and organic matter in shales with variable TOC content and thermal maturity: Examples from the Lublin and Baltic Basins, Poland and Lithuania: International Journal of Coal Geology, v. 180, p. 100-112.

Ma, X., E. Gildin, and T. Plaksina, 2015, Efficient optimization framework for integrated placement of horizontal wells and hydraulic fracture stages in unconventional gas reservoirs: Journal of Unconventional Oil and Gas Resources, v. 9, p. 1-17.

Ma, Y., N. Zhong, D. Li, Z. Pan, L. Cheng, and K. Liu, 2015, Organic matter/clay mineral intergranular pores in the Lower Cambrian Lujiaping Shale in the north-eastern part of the upper Yangtze area, China: A possible microscopic mechanism for gas preservation: International Journal of Coal Geology, v. 137, p. 38-54.

Ma, Y., N. Zhong, L. Cheng, Z. Pan, N. Dai, Y. Zhang, and L. Yang, 2016, Pore structure of the graptolite-derived OM in the Longmaxi Shale, southeastern Upper Yangtze region, China: Marine and Petroleum Geology, v. 72, p. 1-11.

Ma, Y., and A. Jamili, 2016, Modeling the density profiles and adsorption of pure and mixture hydrocarbons in shales: Journal of Unconventional Oil and Gas Resources, v. 14, p. 128-138.

Ma, Y.Z., and S.A. Holditch, eds., 2015, Unconventional oil and gas resources handbook: evaluation and development: Waltham, MA, Gulf Professional Publishing, 536 p.

Ma, Y., Z. Pan, N. Zhong, L.D. Connell, D.I. Down, W. Lin, and Y. Zhang, 2016, Experimental study of anisotropic gas permeability and its relationship with fracture structure of Longmaxi shales, Sichuan Basin, China: Fuel, v. 180, p. 106-115.

Ma, Y., Y. Lu, X. Liu, G. Zhai, Y. Wang, and C. Zhang, 2019, Depositional environment and organic matter enrichment of the Lower Cambrian Niutitang shale in western Hubei Province, south China: Marine and Petroleum Geology, v. 109, p. 381-393.

Ma, Y., N. Zhong, L. Yao, H. Huang, S. Larter, and W. Jiao, 2020, Shale gas desorption behavior and carbon isotopic variations of gases from canister desorption of two sets of gas shales in south China: Marine and petroleum Geology, v. 113, 104127.

Ma, Y., O.H. Ardakani, N. Zhong, H. Liu, H. Huang, S. Larter, and C. Zhang, 2020, Possible pore structure deformation effects on the shale gas enrichment: An example from the Lower Cambrian shales of the eastern Upper Yangtze Platform, south China: International Journal of Coal Geology, v. 117, 103349.

Machnizh, J., 2013, A new model for understanding shale reservoirs: World Oil, v. 234, no. 10, p. 25.

Macquaker, J.H.S., K.G. Taylor, M. Keller, and D. Polya, 2014, Compositional controls on early diagenetic pathways in fine-grained sedimentary rocks: Implications for predicting unconventional reservoir attributes of mudstones: AAPG Bulletin, v. 98, p. 587-603.

Madere, M., 2011, Utica shale is in ‘same league’ as Eagle Ford: Oil and Gas Investor, v. 31, no. 11, p. 23.

Madere, M., 2013, Expanding in the Marcellus: Oil and Gas Investor, v. 33, no. 11, p. 11.

Mahlstedt, N., and B. Horsfield, 2012, Metagenetic methane generation in gas shales I. Screening protocols using immature samples: Marine and Petroleum Geology, v. 31, p. 27-42.

Mahlstedt, N., and B. Horsfield, 2012, Gas generation at high maturities (> Ro = 2%) in gas shales: AAPG Search and Discovery Article #40873, 21 p.

Mahlstedt, N., and B. Horsfield, 2019, Thermovaporisation: A screening tool for the gas-sorptive properties of source rocks: Organic Geochemistry, v. 131, p. 1-4.

Mahmoud, A.A.A., S. Elkatatny, M. Mahmoud, M. Abouelresh, A. Abdulraheem, and A. Ali, 2017, Determination of the total organic carbon (TOC) based on conventional well logs using artificial neural network: International Journal of Coal Geology, v. 179, p. 72-80.

Maiz, N. del Valle Rodriguez, 2007, Geochemical characterization of gases from the Barnett Shale, Fort Worth Basin, Texas: Norman, OK, University of Oklahoma, unpublished M.S. thesis, 123 p.

Makhanov, K., A. Habibi, H. Dehghanpour, and E. Kuru, 2014, Liquid uptake of gas shales: A workflow to estimate water loss during shut-in periods after fracturing operations: Journal of Unconventional Oil and Gas Resources, v. 7, p. 22-32.

Maksoud, J., 2008, Cores, tools unlock shale reservoirs: Hart Energy Publishing, E&P, v. 81, no. 3, p. 77-79.

Malaver, C., J. Herwanger, and M. Kemper, 2014, Tech trends 2014: Interdisciplinary collaboration key to predicting reservoir performance: American Oil & Gas Reporter, v. 57, no. 1, p. 119-124.

Male, F., A.W. Islam, T.W. Patzek, S. Ikonnikova, J. Browning, and M.P. Marder, 2015, Analysis of gas production from hydraulically fractured wells in the Haynesville Shale using scaling methods: Journal of Unconventional Oil and Gas Resources, v. 10, p. 11-17.

Mango, F.D., and D.M. Jarvie, 2009, Low-temperature gas from marine shales: Geochemical Transactions, v. 10, no. 3.

Mani, D., D.J. Patil, A.M. Dayal, S. Kavitha, M. Hafiz, N. Hakhoo, and G.M. Bhat, 2014, Gas potential of Proterozoic and Phanerozoic shales from the NW Himalaya, India: Inferences from pyrolysis: International Journal of Coal Geology, v. 128-129, p. 81-95.

Mankin, C.J., 1983, Unconventional source of natural gas: Annual Review of Energy, v. 8, p. 27-43.

Mann, E., 2014, Stratigraphic study of organic-rich microfacies of the Woodford Shale, Anadarko Basin, Oklahoma: Norman, University of Oklahoma, unpublished M.S. thesis, 122 p.

Manning, E.B., 2011, An integrated paleomagnetic, rock magnetic, and diagenetic study of the Marcellus Shale within the Valley and Ridge province of Pennsylvania and West Virginia: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 102 p.

Mao, W., and S. Guo, 2018, Comparison of factors influencing pore size distributions in marine, terrestrial, and transitional shales of similar maturity in China: Energy & Fuels, v. 32, p. 8145-8153.

Maranuk, C., A. Rodriguez, J. Trapasso, and J. Watson, 2015, Improving underbalanced drilling using air in the Marcellus Shale: World Oil, v. 235, no. 3, p. 37-43.

Marcellus bibliography from Geo Society. <http://www.bucknell.edu/Documents/Geology/Marcellus.pdf>

Marcil, J.-S., P.K. Dorrins, J. Lavoie, N. Mechti, and J.-Y. Lavoie, 2012, Utica and other Ordovician shales: Exploration history in the Quebec sedimentary basins, eastern Canada: AAPG Search and Discovery Article #10451, 57 p. <http://www.searchanddiscovery.com/documents/2012/10451marcil/ndx_marcil.pdf>

Marcon, V., C. Joseph, K.E. Carter, S.W. Hedges, C.L. Lopano, G.D. Guthrie, and J.A. Hakala, 2017, Experimental insights into geochemical changes in hydraulically fractured Marcellus Shale: Applied Geochemistry, v. 76, p. 36-50.

Mariani, K., 2013, EnerVest’s long-held strategy reaps new rewards in burgeoning Utica play: American Oil & Gas Reporter, v. 56, no. 2, p. 44-51.(thermal windows fig 2)

Marion, B., 2014, Tech trends 2014: Cross-well imaging offers higher resolution: American Oil & Gas Reporter, v. 57, no. 1, p. 111-117.

Marko, W.A., 2010, Shale we dance?: Oil and Gas Investor, v. 30, no. 3, p.75-77.

Marra, K.R., R.R. Charpentier, C.J. Schenk, M.D. Lewan, H.M. Leathers-Miller, T.R. Klett, S.B. Gaswirth, P.A. Le, T.J. Mercier, J.K. Pitman, and M.E. Tennyson, 2015, Assessment of undiscovered shale gas and shale oil resources in the Mississippian Barnett Shale, Bend Arch-Fort Worth Basin Province, north-central Texas: U.S. Geological Survey Fact Sheet 2015-3078, 2 p. <https://pubs.er.usgs.gov/publication/fs20153078>

Marra, K.R., 2018, 2015 US Geological Survey assessment of undiscovered shale-gas and shale-oil resources of the Mississippian Barnett Shale, Bend Arch–Fort Worth Basin, Texas: AAPG Bulletin, v. 102, p. 1299-1321.

Martel, T., 2013, Pitfalls in assessing lacustrine shale versus marine shale prospects: AAPG Search and Discovery Article 41188, 30 p. <http://www.searchanddiscovery.com/documents/2013/41188martel/ndx_martel.pdf>

Martin, B.J., and T.E. Ewing, 2009, Ancestral basin architecture: a possible key to the Jurassic Haynesville trend, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 203-208.

Martin, C., and S. Hoyles, 2014, Driving greater efficiencies in produced water clarification: Hart Energy Publishing, E&P, v. 87, no. 10, p. 60-64.

Martin, J.P., D.G. Hill, and T.E. Lombardi, 2004, Fractured shale gas potential in New York: Northeastern Geology and Environmental Sciences, v. 26, no. 1-2, p. 57-78.

Martin, K.G., L. Song, P. Kavousi, and T.R. Carr, 2019, Relationships between lineal fracture intensity and chemical composition in the Marcellus Shale, Appalachian Basin: Interpretation, v. 7, no. 4, p. SJ33-SJ43.

Martineau, D.F., 2007, History of the Newark East field and the Barnett Shale as a gas reservoir: AAPG Bulletin, v. 91, p. 399-403.

Martini, A.M., J.M. Budai, L.M. Walter, and M. Schoell, 1996, Microbial generation of economic accumulations of methane within a shallow organic-rich shale: Nature, v. 383, p. 155-158.

Martini, A.M., L.M. Walter, J.M. Budai, T.C.W. Ku, C.J. Kaiser, and M. Schoell, 1998, Genetic and temporal relations between formation waters and biogenic methane—Upper Devonian Antrim Shale, Michigan Basin, USA: Geochimica et Cosmochimica Acta, v. 62, p. 1699-1720. (biogenic methane)

Martini, A.M., L.M. Walter, T.C.W. Ku, J.M. Budai, M.C. McIntosh, and M. Schoell, 2003, Microbial production and modification of gases in sedimentary basins: a geochemical case study from a Devonian shale gas play, Michigan basin: AAPG Bulletin, v. 87, p. 1355-1375. (biogenic methane)

Martini, A.M., K. Nüsslein, and S.T. Petsch, 2005, Enhancing microbial gas from unconventional reservoirs: GRI GasTIPS, v.11, no. 2, p. 3-7. (biogenic methane)

Martini, A.M., L.M. Walter, and J.C. McIntosh, 2008, Identification of microbial and thermogenic gas components from Upper Devonian black shale cores, Illinois and Michigan basins: AAPG Bulletin, v. 92, p. 327-339.

Mason, J.E., 2011, Well production profiles assess Fayetteville shale gas potential: Oil & Gas Journal, v. 109.11, p. 76-81.

Mason, J., 2012, Well production profiles to assess Fayetteville gas potential revisited: Oil & Gas Journal, v. 110.5, p. 62-70.

Mason, R., 2006, Horizontal, directional drilling taking off in ‘New Frontier’ of unconventional gas: American Oil & Gas Reporter, v. 49, no. 7, p. 56-67.

Mason, R., 2006, New rig construction targets onshore unconventional resources: World Oil, v. 226, no. 8, p. 43-45.

Mason, R., 2007, Small E&P firms to determine direction of US land market: World Oil, v. 228, no. 8, p. 67-71.

Mason, R., 2012, Tuscaloosa tango: Oil and Gas Investor, v. 32, no. 7, p. 79.

Mason, R., 2012, Eagle Ford analog: Oil and Gas Investor, v. 32, no. 12, p. 61-63.

Mason, R., 2012, Pearsall possibilities: Oil and Gas Investor, v. 32, no. 12, p. 77.

Mason, R., 2013, The Marcellus matures: Oil and Gas Investor, v. 33, no. 1, p. 81-82.

Mason, R., 2013, Long live the Barnett: Oil and Gas Investor, v. 33, no. 4, p. 97.

Mason, R., 2013, How the Anadarko stacks up: Oil and Gas Investor, v. 33, no. 12, p. 75.

Mason, R., 2014, Marcellus Shale: Hershey kisses: Oil and Gas Investor, v. 34, no. 1, p. 117-118.

Mason, R., 2014, Marcellus market report: Hart Energy Publishing, E&P, v. 87, no. 1, p. 16.

Mason, R., 2014, Oil’s new launching pad: Oil and Gas Investor, v. 34, no. 2, p. 44-57.

Mason, R., 2014, Exploring the deep Niobrara: Oil and Gas Investor, v. 34, no. 6, p. 66-68.

Mason, R., 2014, The Oklahoma resource plays: Oil and Gas Investor, v. 34, no. 12, p. 81.

Mason, R., 2015, That’s Burket with a single T: Oil and Gas Investor, v 35, no. 8, p. 91. (Burket-Geneseo)

Mason, R., 2015, Rethinking re-fracks: Oil and Gas Investor, v. 35, no. 10, p. 97.

Mason, R., 2017, Heyday in the Haynesville: Hart Energy Publishing, E&P, v.90, no. 5, p. 20.

Mastalerz, M., A. Schimmelmann, G.P. Lis, A. Drobniak, and A. Stankiewicz, 2012, Influence of maceral composition on geochemical characteristics of immature shale kerogen: Insight from density fraction analysis: International Journal of Coal Geology, v. 103, p. 60-69.

Mastalerz, M., L. He, and Y.B. Melnichenko, 2012, Porosity of coal and shale: insights from gas adsorption and SANS/USANS techniques: Energy & Fuels, v. 26, p. 5109-5120.

Mastalerz, M., A. Schimmelmann, A. Drobniak, and Y. Chen, 2013, Porosity of Devonian and Mississippian New Albany Shale across a maturation gradient: Insights from organic petrology, gas adsorption, and mercury intrusion: AAPG Bulletin, v. 97, p. 1621-1643.

Mastalerz, M., C. Gasawal, F. Krause, C. Clarkson, and C. DeBuhr, 2017, Applicability of Micro-FTIR in detecting shale heterogeneity: AAPG Search and Discovery Article No. 51360, 33 p. <http://www.searchanddiscovery.com/pdfz/documents/2017/51360mastalerz/ndx_mastalerz.pdf.html>

Mastalerz, M., L. Hampton, A. Drobniak, and H. Loope, 2017, Significance of analytical particle size in low-pressure N2 and CO2 adsorption of coal and shale: International Journal of Coal Geology, v. 178, p. 122-131.

Matthews, R.D., 1993, Review and revision of the Devonian-Mississippian stratigraphy in the Michigan Basin, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. D1-D85.

Mauck, J.V., R.G. Loucks, and D.J. Entzminger, 2018, Stratigraphic architecture, depositional systems, and lithofacies of the Mississippian Upper Barnett Two Finger Sand interval, Midland Basin, Texas: GCAGS Journal, v. 7, p. 21-45.

Mavko, G., D. Sava, J.-M. Florez, and T. Mukerji, 2005, Integrated seismic/rock physics approach to characterizing fractured reservoirs: GRI GasTIPS, v.11, no. 3, p. 6-10.

Mavor, M.J., S.R. Bereskin, J.R. Robinson, and T.J. Pratt, 2003, Lewis Shale gas resource and production potential: Des Plaines, Illinois, Gas Technology Institute, Final Report GRI-03/0037.

Maxwell, S., 2011, Microseismic hydraulic fracture imaging: The path toward optimizing shale gas production: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 340-346.

Maxwell, S.C., C.K. Waltman, N.R. Warinski, M.J. Mayerhofer, and N. Boroumand, 2007, Imaging hydraulic-fracture-induced seismic deformation: Journal of Petroleum Technology, v. 59, no. 3, p. 54-57.

Maxwell, T., 2005, Southwestern’s shale: Harold Korell led Southwestern into madcap E&P prominence. The Fayetteville Shale play may propel it to E&P legend: Oil & Gas Investor, v. 25, no. 12, p. 45-46.

Maxwell, T., 2007, First-mover advantage: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 26-28.

Maxwell, T., 2007, Executive Q&A, Fayetteville chief: Oil and Gas Investor, v. 27, no. 2, p. 45-46.

Mayerhofer, M.J., 2010, SRV proves key in shales for correlating stimulation and well performance: American Oil & Gas Reporter, v. 53, no. 13, p. 80-89.

McCallum, M., 2008, Crosswell key in unconventional plays: American Oil & Gas Reporter, v. 51, no. 13, p. 102-107.

McCutchan, M., 2014, Water treatment system enables flowback reuse: Hart Energy Publishing, E&P, v. 87, no. 9, p. 120-122.

McDaniel, J., and A. Shadravan, 2013, Zonal isolation critical in developing unconventional resources, part two: American Oil & Gas Reporter, v. 56, no. 8, p. 52-59. (Marcellus)

McGowen, C., 2010, Horn River Basin keeping Canada hot: AAPG Explorer, v. 31, no. 10, p. 48, 51. <http://www.aapg.org/explorer/2010/10oct/regsec1010.cfm>

McGowen, C., 2011, Canada’s URs offer opportunities: AAPG Explorer, v. 32, no. 3, p. 40, 42. <http://www.aapg.org/explorer/2011/03mar/regsec0311.cfm>

McGowen, C., 2012, Shared shale experience is a great tool: AAPG Explorer, v. 33, no. 2, p. 32, 34. <http://www.aapg.org/explorer/2012/02feb/regsec0212.cfm>

McIntosh, J.C., and A.M. Martini, 2008, Hydrogeochemical indicators for microbial methane in fractured organic-rich shales: case studies of the Antrim, New Albany, and Ohio shales, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 162-174. (biogenic methane)

McKay, A.T., Z.K. Shipton, R.J. Lunn, and J.F. Gale, 2019, Mini thief zones: Subcentimeter sedimentary features enhance fracture connectivity in shales: AAPG Bulletin, v. 103, p. 951-971.

McKay, F., and J. Dunn, 2008, Horn River Basin shales heat up: Canadian Energy Investment outlook 2008, supplement to Oil and Gas Investor, June, p. 7-8.

McKay, L.K., and L.A. Salita, 2010, Marcellus groundwater claims: a case for scientifically informed decisions: World Oil, v. 231, no. 12, p. 43-48.

McKenna, K., and A. Ouenes, 2012, ‘Drill here’ models reduce shale play risk: Hart Energy Publishing, E&P, v. 85, no. 2, p. 60-61.

Meakin, P., H. Huang, A. Malthe-Sørenssen, and K. Thøgersen, 2013, Shale gas: Opportunities and challenges: Environmental Geosciences Journal, v. 20, no. 4, p. 151-164.

Medlock, K.B., III, A.M. Jaffe, and P.R. Hartley, 2011, Shale gas and U.S. national security: Energy Forum, James A. Baker III Institute for Public Policy, Rice University, 62 p. <http://bakerinstitute.org/publications/EF-pub-DOEShaleGas-07192011.pdf>

Medlock, K.B., III, 2012, Modeling the implications of expanded US shale gas production: Energy Strategy Reviews, v. 1, p. 33-41.

Mehmani, A., and M. Prodanović, 2014, The application of sorption hysteresis in nano-petrophysics using multiscale multiphysics network models: International Journal of Coal Geology, v. 128-129, p. 96-108.

Mehta, A., 2016, Reducing costs in shale plays: Hart Energy Publishing, E&P, v. 89, no. 6, p. 34-35.

Meisenhelder, J., 2013, Seismic for unconventionals: Hart Energy Publishing, E&P, v. 86, no. 6, p. 124.

Mejia, C., and N. Mekic, 2019, Advancements in shale reservoir characterization optimize capital expenditures: World Oil, v. 240, no. 3, p. 53-55.

Melton, B., and N. Fishman, 2014, Increasing the accuracy of reservoir characterization in unconventional reservoirs: AAPG Search and Discovery Article #41409, 25 slides. <http://www.searchanddiscovery.com/pdfz/documents/2014/41409melton/ndx_melton.pdf.html>

Memon, A., A. Li, B.S. Memon, T. Muther, W. Han, M. Kashif, M.U. Tahir, and I. Akbar, 2021, Gas adsorption and controlling factors of shale: Review, application, comparison and challenges: Natural Resources Research, v. 30, p. 827-848.

Mendhe, V.A., S. Mishra, R.G. Khangar, A.D. Kamble, D. Kumar, A.K. Varma, H. Singh, S. Kumar, and M. Bannerjee, 2017, Organo-petrographic and pore facets of Permian shale beds of Jharia Basin with implications to shale gas reservoir: Journal of Earth Science, v. 28, no. 5, p. 897-916.

Mendhe, V.A., S. Mishra, A.K. Varma, A.D. Kamble, M. Bannerjee, B.D. Singh, T.M. Sutay, and V.P. Singh, 2018, Geochemical and petrophysical characterisitcs of Permian shale gas reservoirs of Raniganj Basin, west Bengal, India: International Journal of Coal Geology, v. 188, p. 1-24.

Mendhe, V.A., V. Kumar, V.K. Saxena, M. Bannerjee, A.D. Kamble, B.D. Singh, S. Mishra, S. Sharma, J. Kumar, A.K. Varma, D.K. Mishra, and S.K. Samad, 2018, Evaluation of gas resource potentiality, geochemical and mineralogical characteristics of Permian shale beds of Latehar-Auranga coalfield, India: International Journal of Coal Geology, v. 196, p. 43-62.

Meng, Q., X. Wang, X. Wang, L. Zhang, C. Jiang, X. Li, and B. Shi, 2016, Variation in the carbon isotopic composition of alkanes during shale gas desorption process and its geological significance: Journal of Natural Gas Geoscience, v. 1, p. 139-146.

Meng, Q., X. Wang, X. Wang, B. Shi, X. Luo, L. Zhang, Y. Lei, C. Jiang, and P. Liu, 2017, Gas geochemical evidences for biodegradation of shale gases in the Upper Triassic Yanchang Formation, Ordos Basin, China: International Journal of Coal Geology, v. 179, p. 139-152.

Meng, X., and J.J. Sheng, 2016, Optimization of huff-n-puff gas injection in a shale gas condensate reservoir: Journal of Unconventional Oil and Gas Resources, v. 16, p. 34-44.

Mengal, S.A., and R.A. Wattenbarger, 2011, Accounting for adsorbed gas in shale gas reservoirs: SPE Paper 141085, 15 p.

Merkel, A., R. Fink, and R. Littke, 2015, The role of pre-adsorbed water on methane sorption capacity of Bossier and Haynesville shales: International Journal of Coal Geology, v. 147-148, p. 1-8.

Merkel, A., R. Fink, and R. Littke, 2016, High pressure methane sorption characteristics of lacustrine shales from the Midland Valley Basin, Scotland: Fuel, v. 182, p. 361-372.

Meslé, M., C. Périot, G. Dromart, and P. Oger, 2015, Methanogenic microbial community of the eastern Paris Basin: Potential for energy production from organic-rich shales: International Journal of Coal Geology, v. 149, p. 67-76.

Meyer, P.K., 2012, Shale source rocks a game-changer due to 8-to-1 resource potential: Oil & Gas Journal, v. 110.5, p. 72-74.

Meyers, G.R., 2013, A new-age boom in an old-age play, in Midcontinent playbook: Houston, Hart Energy Publishing, p. 58-68.

Meyers, G.R., 2013, Appalachian shales: technology: Drawing on new drilling and completion technologies, in Appalachian shales playbook: Houston, Hart Energy Publishing, p. 64-76.

Meyers, G.R., 2014, Efficiency and effectiveness curves drive unconventional production into 2014, in 2014 US Unconventional yearbook: Houston, Hart Energy Publishing, p. 100-125.

Meyers, J., and M. Sagan, 2004, Air hammers cut Barnett Shale drilling time in half: World Oil, v. 225, no. 9, p. 71-72.

Mgboji, J., 2010, Casing drilling tool sets multiple records in Marcellus: Hart Energy Publishing, E&P, v. 83, no. 6, p. 40-41.

Mi, J., S. Zhang, J. Su, K. He, B. Zhang, H. Tian, and X. Li, 2018, The upper thermal maturity limit of primary gas generated from marine organic matters: Marine and Petroleum Geology, v. 89, p. 120-129.

Milam, K., 2009, Database gathers Europe shale data; ‘deliverables for direct application’: AAPG Explorer, v. 30, no. 11, p. 10. <http://www.aapg.org/explorer/2009/11nov/shale1109.cfm>

Milam, K., 2012, Wolfcamp learning; collaboration play: AAPG Explorer, v. 33, no. 7, p. 18, 20. <http://www.aapg.org/explorer/2012/07jul/wolfcamp0712.cfm>

Milam, K., 2012, No proven cases of aquifer fouling, hydro fracturing caution suggested: AAPG Explorer, v. 33, no. 7, p. 24. <http://www.aapg.org/explorer/2012/07jul/hydrofracturing_0712.cfm>

Milam, K., 2012, Sometimes paying up can avoid expensive pain; teams finding new ways to shale success: AAPG Explorer, v. 33, no. 7, p. 28, 30. <http://www.aapg.org/explorer/2012/07jul/3d0712.cfm>

Milam, K., 2014, Seismic sets sights on sweet spots in shale: AAPG Explorer, v. 35, no. 3, p. 48. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/8065/seismic-sets-sights-on-sweet-spots-in-shale>

Milam, K., 2014, China poised for American-style shale boom: AAPG Explorer, v. 35, no. 9, p. 18, 22. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/11797/china-poised-for-american-style-shale-boom>

Milam, K., 2018, New methods drive Haynesville renaissance: AAPG Explorer, v. 39, no. 2, p. 24-25. <https://explorer.aapg.org/story/articleid/44930/new-methods-drive-haynesville-renaissance>

Milici, R.C., and J.B. Roen, 1981, Stratigraphy of the Chattanooga Shale in the Newman Ridge and Clinch Mountain areas, Tennessee: Tennessee Division of Geology Report of Investigation No. 40, 102 p.

Milici, R.C., 1993, Autogenic gas (self sourced) from shales—an example from the Appalachian basin, in D.G. Howell, ed., The future of energy gases: U.S. Geological Survey Professional Paper 1570, p. 253-278.

Milici, R.C., 1996, Play Dbg: Upper Devonian fractured black and gray shales and siltstones, in J.B. Roen and B.J. Walker, eds., The atlas of major Appalachian gas plays: West Virginia Geological and Economic Survey Publication V-25, p. 86-92.

Milici, R.C., R.T. Ryder, C.S. Swezey, R.R. Charpentier, T.A. Cook, R.A. Crovelli, T.R. Klett, R.M. Pollastro, and C.J. Schenk, 2003, Assessment of undiscovered oil and gas resources of the Appalachian Basin Province, 2002: U.S. Geological Survey Fact Sheet FS-009-03, 2p. <http://pubs.usgs.gov/fs/fs-009-03/>

Milici, R.C., and R.T. Ryder, 2004, Petroleum Systems succeed play basis in Appalachian Basin resource estimate: Oil & Gas Journal, v. 102.14, April 12 issue, p. 40-43.

Milici, R.C., 2005, Assessment of undiscovered natural gas resources in Devonian black shales, Appalachian Basin, eastern U.S.A.: U.S. Geological Survey Open-File Report 2005-1268, 31 p. <http://pubs.usgs.gov/of/2005/1268/>

Milici, R.C., and C.S. Swezey, 2006, Assessment of Appalachian Basin oil and gas resources: Devonian Shale-Middle and Upper Paleozoic Total Petroleum System: U.S. Geological Survey Open-File Report 2006-1237, 70 p. <http://pubs.usgs.gov/of/2006/1237/>

Milici, R.C., D.W. Houseknecht, C.P. Garrity, and B. Fulk, 2009, Arkoma Basin shale gas and coal-bed gas resources, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 209-233.

Milici, R.C., J.L. Coleman, and M.A. Kirschbaum, 2014, Assessment of the Marcellus Shale, Utica Shale, and east coast Mesozoic basins in the eastern United States — a review: AAPG Search and Discovery Article 30336, 9 slides. <http://www.searchanddiscovery.com/documents/2014/30336milici/ndx_milici.pdf>

Milkov, A.V., M. Faiz, and G. Etiope, 2020, Geochemistry of shale gases from around the world: Composition, origins, isotope reversals and rollovers, and implications for the exploration of shale plays: Organic Geochemistry, v. 143, 103997.

Miller, B., 2014, Lithologic characterization of the Barnett Shale controls on reservoir quality: Stillwater, Oklahoma State University, unpublished M.S. thesis.

Miller, J., Sr., 2012, Unconventional gas is here to stay: World Oil, v. 233, no. 8, p. 27.

Milliken, K., S. Choh, P. Papazis, and J. Schieber, 2007, ‘Cherty’ stringers in the Barnett Shale are agglutinated foraminifera: Sedimentary Geology, v. 198, p. 221-232.

Milliken, K.L., W.L. Esch, R.M. Reed, and T. Zhang, 2012, Grain assemblages and strong diagenetic overprinting in siliceous mudrocks, Barnett Shale (Mississippian), Fort Worth Basin, Texas: AAPG Bulletin, v. 96, p. 1553-1578.

Milliken, K.L., R.J. Day-Stirrat, P.K. Papazis, and C. Dohse, 2012, Carbonate lithologies of the Mississippian Barnett Shale, Fort Worth Basin, Texas, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 290-321.

Milliken, K.L., M. Rudnicki, D.N. Awwiller, and T. Zhang, 2013, Organic matter-hosted pore system, Marcellus Formation (Devonian), Pennsylvania: AAPG Bulletin, v. 97, p. 177-200.

Milliken, K.L., and R.J. Day-Stirrat, 2013, Cementation in mudrocks: Brief review with examples from cratonic basin mudrocks, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 133-150.

Milner, M., R. McLin, and J. Petriello, 2010, Imaging texture and porosity in mudstones and shales: Comparison of secondary and ion milled backscatter SEM methods: Canadian Unconventional Resources and International Petroleum Conference, Calgary, Alberta, Canada, October 19-21, 1010, Canadian Society for Unconventional Gas/Society of Petroleum Engineers Paper 138975, 10 p.

Mirenda, T., and J. Keay, 2017, Production forecasting in the Scoop/Stack play, in SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, p. 42-51.

Misch, D., D. Gross, N. Mahlstedt, V. Makogon, and R.F. Sachsenhofer, 2016, Shale gas/shale oil potential of Upper Visean black shales in the Dniepr-Donets Basin (Ukraine): Marine and Petroleum Geology, v. 75, p. 203-219.

Misch, D., D. Gross, G. Hawranek, B. Horsfield, J. Klaver, F. Mendez-Martin, J.L. Ural, S. Vranjes-Wessely, R.F. Sachsenhofer, J. Schmatz, J. Li, and C. Zou, 2019, Solid bitumen in shales: Petrographic characteristics and implications for reservoir characterization: International Journal of Coal Geology, v. 205, p. 14-31.

Mishra, V., T.Z. Rice, I. Foianini, D. Murphy, and B.B. Sarmah, 2013, Scanning tool analyzes zonal isolation: American Oil & Gas Reporter, v. 56, no. 11, p. 120-125.

Miskimins, J.L., 2008, Factors key for unconventional wells: American Oil & Gas Reporter, v. 51, no. 6, p. 99-108.

Modica, C.J., and S.G. Lapierre, 2012, Estimation of kerogen porosity in source rocks as a function of thermal transformation: Example from the Mowry Shale in the Powder River Basin of Wyoming: AAPG Bulletin, v. 96, p. 87-108.

Moghadam, A.A., and R. Chalaturnyk, 2014, Expansion of the Lkinkenberg’s slippage equation to low permeability porous media: International Journal of Coal Geology, v. 123, p. 2-9.

Moghadam, A., N.B. Harris, K. Ayranci, J.S. Gomez, N.A. Angulo, and R. Chalaturnyk, 2019, Brittleness in the Devonian Horn River shale, British Columbia, Canada: Journal of Natural Gas Science and Engineering, v. 62, p. 247-258.

Moghaddam, R.N., and M. Jamiolahmady, 2016, Fluid transport in shale gas reservoirs: Simultaneous effects of stress and slippage on matrix permeability: International Journal of Coal Geology, v. 163, p. 87-99.

Moghazi, A.H., M.K. Zobaa, F. Mádai, and M. Hámor-Vidó, 2020, Palynofacies and organic thermal maturity of the Upper Mancos Formation in the San Juan Basin, New Mexico, USA: Geosciences and Engineering, v. 8, p. 312-321.

Mohaghegh, S.D., 2016, Determining the main drivers in hydrocarbon production from shale using advanced data-driven analytics — A case study in Marcellus shale: Journal of Unconventional Oil and Gas Resources, v. 15, p. 146-157.

Mohaghegh, S.D., R. Gaskari, M. Maysami, 2017, Data analytics optimize shale wells: American Oil & Gas Reporter, v. 60, no. 8, p. 72-77.

Mohnhoff, D., R. Littke, B.M. Krooss, and P. Weniger, 2016, Flow-through extraction of oil and gas shales under controlled stress using organic solvents: Implications for organic matter-related porosity and permeability changes with thermal maturity: International Journal of Coal Geology, v. 157, p. 84-99. (Posidonia)

Mohr, S.H., and G.M. Evans, 2007, Model proposed for world conventional, unconventional gas: Oil & Gas Journal, v. 105.47, p. 46-51.

Mohr, S.H., and G.M. Evans, 2010, Shale gas changes N. American gas production projections: Oil & Gas Journal, v. 108.27, p. 60-64.

Mokhtari, M., D. Wood, A. Ghanizadeh, P. Kulkarni, V. Rasouli, E. Fathi, M. Saidian, and R. Barati, 2017, Virtual special issue: Advances in the petrophysical and geomechanical characterization of organic-rich shales: Journal of Natural Gas Science and Engineering, v. 38, p. 638-641.

Molgat, M., and J.-Y. Chatellier, 2014, Tools to get the most information from shale cores: An example from the Lorraine and Utica shales of Quebec: AAPG Search and Discovery Article 41338, 9 slides. <http://www.searchanddiscovery.com/documents/2014/41338molgat/ndx_molgat.pdf>

Molofsky, L.J., J.A. Connor, S.K. Farhat, A.S. Wylie, Jr., and T. Wagner, 2011, Methane in Pennsylvania water wells unrelated to Marcellus shale fracturing: Oil & Gas Journal, v. 109.19, p. 54-67, 93.

Moniz, E.J., 2011, Trends in supply, demand indicate expanding role for gas in U.S. energy mix: American Oil & Gas Reporter, v. 54, no. 10, p. 68-77.

Monroe, R.M., 2009, Petrographic and stratigraphic analysis of the Barnett Shale (Mississippian) in Hill County, Texas: evidence for eustacy and tectonism: Fort Worth, TX, Texas Christian University, unpublished M.S. thesis.

Monroe, R.M., and J.A. Breyer, 2012, Shale wedges and stratal architecture, Barnett Shale (Mississippian), southern Fort Worth Basin, Texas, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 344-367.

Montgomery, C.T., and M.B. Smith, 2010, Hydraulic fracturing: history of an enduring technology: Journal of Petroleum Technology, v. 62, p. 26-32.

Montgomery, S., 2004, Barnett Shale: a new gas play in the Fort Worth Basin: Petroleum Frontiers, v. 20, no. 1, 72 p.

Montgomery, S.L., D.M. Jarvie, K.A. Bowker, and R.M. Pollastro, 2005, Mississippian Barnett Shale, Fort Worth Basin, north-central Texas: Gas-shale play with multi-trillion cubic foot potential: AAPG Bulletin, v. 89, p. 155-175.

Montgomery, S.L., D.M. Jarvie, K.A. Bowker, and R.M. Pollastro, 2006, Mississippian Barnett Shale, Fort Worth Basin, north-central Texas: Gas-shale play with multi-trillion cubic foot potential: reply: AAPG Bulletin, v. 90, p. 967-969.

Moon, B., J. Kok, E. Tollefsen, S. Yen Han, J. Baihly, and R. Malpani, 2011, Shale energy: Developing the Woodford— Improving shale gas production through accurate well placement: World Oil, v. 232, no. 2, p. D-101 to D-107.

Morales-German, G., R. Navarro, and F.X. Dubost, 2012, Approach models shale gas production: American Oil & Gas Reporter, v. 55, no. 8, p. 106-110.

Morga, R., and M. Pawlyta, 2018, Microstructure of graptolite periderm in Silurian gas shales of northern Poland: International Journal of Coal Geology, v. 189, p. 1-7.

Morga, R., and M. Kamińska, 2018, The chemical composition of graptolite periderm in the gas shales from the Baltic Basin of Poland: International Journal of Coal Geology, v. 199, p. 10-18.

Morgan, S., 2017, Treating key in developing shale plays: American Oil & Gas Reporter, v. 60, no. 3, p. 64-69.

Moritis, G., 2004, Horizontal wells show promise in Barnett Shale: Oil & Gas Journal, v. 102.3, p. 58.

Moritis, G., 2009, Woodford well perforated, stimulated without wellbore intervention: Oil & Gas Journal, v. 107.2, p. 44-47.

Moritis, G., 2010, Shale gas technology: Oil & Gas Journal, v. 108.36, p. 12.

Moritis, G., 2011, Shale gas resource estimates: Oil & Gas Journal, v. 109.11b, p. 14.

Moritis, G., 2011, Shale gas recoveries: Oil & Gas Journal, v. 109.17c, p. 14.

Morris, G.DL, 2009, Fueled by acquisitions, XTO Energy turns corner to organic growth strategy: American Oil & Gas Reporter, v. 52, no. 1, p. 70-81.

Morris, G.DL, 2009, Latest Marcellus results reveal prime areas: American Oil & Gas Reporter, v. 52, no. 4, p. 165-166.

Morris, G.DL, 2010, Midstream investment finds support: American Oil & Gas Reporter,v. 53, no. 11, p. 75-80.

Morris, G.DL, 2012, Shale plays present global opportunity: American Oil & Gas Reporter, v. 55, no. 4, p. 61-66.

Morris, G.DL, 2012, No midlife crisis in the Barnett: Oil and Gas Investor, v. 32, no. 4, p. 85-88.

Morris, G. DL, 2014, Rockies tight sands and shales: midstream: Good problems to have: Midstream rushes to keep pace in Niobrara, in Rockies tight sands and shales playbook: Houston, Hart Energy Publishing, p. 66-74.

Morris, G. DL, 2015, Great expectations for U.K. shales: Oil and Gas Investor, v. 35, no. 4, p. 57-58.

Morrison, R., and S. Valonis, 2013, Unconventional repositioning: Oil and Gas Investor, v. 33, no. 2, p. 89-91.

Morschhauser, J., S. Parker, and B. Todd, 2014, Greener completions advance in the Marcellus: World Oil, v. 235, no. 3, p. 99-102.

Morsy, S., C.J. Hetherington, and J.J. Sheng, 2015, Effect of low-concentration HCl on the mineralogy, physical and mechanical properties, and recovery factors of some shales: Journal of Unconventional Oil and Gas Resources, v. 9, p. 94-102.

Morton, M.C., 2014, Naturally occurring methane found in groundwater in New York: Earth, v. 59, no. 5, p. 12.

Mosher, K., J. He, Y. Liu, E. Rupp, and J. Wilcox, 2013, Molecular simulation of methane adsorption in micro- and mesoporous carbons with applications to coal and gas shale systems: International Journal of Coal Geology, v. 109-110, p. 36-44.

Mueller, M., 2011, Environmental concerns stymie NY shale development: Hart Energy Publishing, E&P, v. 84, no. 11, p. 88.

Mullen, M., 2005, Reservoir characterization and analysis of shale gas methane (SGM) plays using wireline logs, in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 109-114.

Mullen, M., 2010, The state of shale plays in Europe: Shale Energy: Developing International Plays, Special Section, World Oil, v. 231, no. 12, p. D-79.

Munson, E.O., G.R.L. Chalmers, R.M. Bustin, and K. Li, 2016, Utilizing smear mounts for X-ray diffraction as a fully quantitative approach in rapidly characterizing the mineralogy of shale gas reservoirs: Journal of Unconventional Oil and Gas Resources, v. 14, p. 22-31.

Murray, J., 2011, The frac water debate: putting a resource in perspective: Hart Energy Publishing, E&P, v. 84, no. 11, p. 5.

Murray, J., 2017, Scoop and Stack show continuing return on investment, in SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, p. 36-41.

Mutalik, P.N., and R.W. Gibson, 2008, Williams compares sequential, simultaneous Barnett fracturing: Oil & Gas Journal, v. 106.47, p. 34-42.

Mutalik, P.N., and B. Gibson, 2008, Case history of sequential and simultaneous fracturing of the Barnett Shale in Parker County: Paper No. SPE 116124, SPE ATCE, Denver, CO.

Myers, G.A., U. Ahmed, P.H.O. Christian, and J.M. Pope, 2017, Shell uses Raman spectrometer to evaluate Marcellus gas: Oil & Gas Journal, v. 115.1, p. 50-54.

Myers, K., P. Sandwell, and D. Jenkins, 2006, Barnett Shale operators extend geo-steering to “geo-navigation”: World Oil, v. 226, no. 8, p. 109.

Myers, R.R., 2008, Stimulation and production analysis of underpressured (Marcellus) shale gas: SPE-119901.

Namhata, A., M.J. Small, and A.K. Karamalidis, 2014, Multi-model weighted predictions for CH4 and H2S solubilities in freshwater and saline formation waters relevant to unconventional oil and gas extraction: International Journal of Coal Geology, v. 131, p. 177-185.

Naraghi, M.E., and F. Javadpour, 2015, A stochastic permeability model for the shale-gas systems: International Journal of Coal Geology, v. 140, p. 111-124.

Nash, S.S., 2014, Key factors for success in unconventionals: Characteristics, key plays, typical challenges: AAPG Search and Discovery Article 80352, 63 slides. <http://www.searchanddiscovery.com/documents/2014/80352nash/ndx_nash.pdf>

Nash, S.S., 2014, A prospectivity checklist for unconventional plays: AAPG Search and Discovery Article #70160, 7 p. <http://www.searchanddiscovery.com/pdfz/documents/2014/70160nash/ndx_nash.pdf.html>

Nash, S.S., 2015, Optimization in U.S. shale plays: Emerging new techniques and technologies: AAPG Search and Discovery Article #80442, 18 p. <http://www.searchanddiscovery.com/pdfz/documents/2015/80442nash/ndx_nash.pdf.html>

Nash, S.S., 2016, Evaluating shale play oopportunities, optimizing your own operations: AAPG Search and Discovery Article #80512, 47 p. <http://www.searchanddiscovery.com/pdfz/documents/2016/80512nash/ndx_nash.pdf.html>

Nash, S., 2018, Proppant technology advances and reservoir performance: AAPG Search and Discovery Article #70326, 27 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/70326nash/ndx_nash.pdf.html>

Nash, S., New technologies in the development of unconventional resources in the U.S.: AAPG Search and Discovery Article #70331, 33 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/70331nash/ndx_nash.pdf.html>

Nash, S., New technologies in the development of unconventional resources in the U.S.: AAPG Search and Discovery Article 70359, 36 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/70359nash/ndx_nash.pdf.html>

Nasriani, H.R., M. Jamiolahmady, T. Saif, and J. Sánchez, 2018, A systematic investigation into the flowback cleanup of hydraulic-fractured wells in unconventional gas plays: International Journal of Coal Geology, v. 193, p. 46-60.

National Energy Board, 2009, A primer for understanding Canadian shale gas: Canada National Energy Board, Energy Briefing Note, 23 p. <http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/nrgyrprt/ntrlgs/prmrndrstndngshlgs2009/prmrndrstndngshlgs2009-eng.pdf>

National Petroleum Council, 1980, Unconventional gas sources, v. 3, Devonian shale: National Petroleum Council, 87 p.

Navaneethan, N., 2013, Liquids-rich production booming in the Midcontinent, in Midcontinent playbook: Houston, Hart Energy Publishing, p. 76-80.

Navigant Consulting, 2008, North American natural gas supply assessment: Prepared for American Clean Skies Foundation, 90 p. <http://www.cleanskies.org/upload/MediaFiles/Files/Downloads2/finalncippt2.pdf>

Nawratil, A., H. Gomez, and C. Larriestra, 2012, Key tools for black shale evaluation: Geostatistics and inorganic geochemistry applied to Vaca Muerta Formation, Neuquen Basin, Argentina: AAPG Search and Discovery Article #41028, 19 p. <http://www.searchanddiscovery.com/documents/2012/41028nawratil/ndx_nawratil.pdf>

Neal, D.W., 1979, Subsurface stratigraphy of the Middle and Upper Devonian clastic sequence in southern West Virginia and its relation to gas production: Unpublished Ph.D. dissertation, West Virginia University, 144 p.

Nehring, R., 2009, The disruptive shales: Oil and Gas Investor, v. 29, no. 1, p. 97-99.

Nehring, R., 2012, The stabilizing shales: Oil and Gas Investor, v. 32, no. 1, p. 95-97.

Nelson, A., 2016, Aubrey in the Vaca Muerta: Oil and Gas Investor, v. 36, no. 3, p. 21.

Nettles, L., and S. Lonnquist, 2011, Environmental regulation of Marcellus drilling: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 92-97.

Nettles, L., and J. Rothrock, 2015, Trends in domestic regulation of shale development: Shaletech Report, supplement to World Oil, v. 236, no. 3, p. S-27 to S-30.

Neuhaus, C.W., C. Telker, M. Ellison, and K. Blair, 2013, Microseismic monitoring yields production optimization strategies for Marcellus Shale: World Oil, v. 234, no. 11, p. 35-47.

Newell, K.D., 2007, Wellsite, laboratory, and mathematical techniques for determining sorbed gas content of coals and gas shales utilizing well cuttings: Natural Resources Research, v. 16, p. 55-66.

Newman, N., 2014, Flogging an Argentinian ‘dead cow’ could be profitable: Hart Energy Publishing, E&P, v. 87, no. 1, p. 78-81.

Newport, L.P., A.C. Aplin, J.G. Gluyas, H.C. Greenwell, and D.R. Grőcke, 2016, Geochemical and lithological controls on a potential shale reservoir: Carboniferous Holywell Shale, Wales: Marine and Petroleum Geology, v. 71, p. 198-210.

Nicholson, B., 2010, Fracing and the courts: Oil and Gas Investor, v. 30, no. 7, p. 60-62.

Nicholson, B., and K. Blanson, 2011, Trends emerge on hydraulic fracturing litigation: Oil & Gas Journal, v. 109.19, p. 80-85.

Nicholson, B., and A. Fair, 2012, Fracing focus shifts to water: Oil and Gas Investor, v. 32, no. 2, p. 70-73.

Nicot, J.-P., and B.R. Scanlon, 2012, Water use for shale-gas production in Texas, U.S.: American Chemical Society, Environmental Science & Technology, v. 46, p. 3580-3586.

Nicot, J.-P., B.R. Scanlon, R.C. Reedy, and R.A. Costley, 2014, Source and fate of hydraulic fracturing water in the Barnett Shale: A historical perspective: American Chemical Society, Environmental Science and Technology, v. 48, p. 2464-2471.

Nicot, J.-P., B.R. Scanlon, R.C. Reedy, and R.A. Costley, 2014, Study assesses water use in Barnett: American Oil & Gas Reporter, v. 57, no. 9, p. 110-115.

Nie, H., Z. Jin, and J. Zhang, 2018, Characteristics of three organic matter pore types in the Wufeng-Longmaxi Shale of the Sichuan Basin, southwest China: Scientific Reports, v. 8, Article 7014, 11 p. <https://www.nature.com/articles/s41598-018-25104-5>

Nie, H., C. Sun, G. Liu, W. Du, and Z. He, 2019, Dissolution pore types of the Wufeng Formation and the Longmaxi Formation in the Sichuan Basin, south China: Implications for shale gas enrichment: Marine and Petroleum Geology, v. 101, p. 243-251.

Nie, H., Z. Jin, C. Sun, Z. He, G. Liu, and Q. Liu, 2019, Organic matter types of the Wufeng and Longmaxi Formations in the Sichuan Basin, south China: Implications for the formation of organic matter pores: Energy & Fuels, v. 33, p. 8076-8100.

Nie, H., Z. Yang, W. Dang, Q. Chen, P. Li, D. Li, and R. Wang, 2020, Study of shale gas release from freshly drilled core samples using a real-time canister monitoring technique: Release kinetics, influencing factors, and upscaling: Energy & Fuels, v. 34, p. 2916-2924.

Nieto, F., 2012, Pickens bullish on shale: Hart Energy Publishing, E&P, v. 85, no. 1, p. 8, 10.

Nikhanj, M., and T. Sloan, 2009, Defining the Haynesville: Oil and Gas Investor, v. 29, no. 8, p. 85-86.

Nikhanj, M., 2010, Fine feathers: details of Eagle Ford: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 18-20.

Nikhanj, M., and S. Jamal, 2011, Analyzing shale play economics: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 144-149.

Niu, D., D. Renock, M. Whitehouse, J. Leone, H. Rowe, J. Landis, K. Hamren, C.W. Symcox, and M. Sharma, 2016, A relict sulfate-methane transition zone in the mid-Devonian Marcellus Shale: Geochimica et Cosmochimica Acta, v. 182, p. 73-87.

Niu, X., D. Yan, X. Zhuang, Z. Liu, B. Li, X. Wei, H. Xu, and D. Li, 2018, Origin of quartz in the lower Cambrian Niutitang Formation in south Hubei Province, upper Yangtze platform: Marine and Petroleum Geology, v. 96, p. 271-287.

Nogarin, M., 2012, Shale plays abound in Latin America: World Oil, v. 233, no. 12, p. 90-92.

Nolte, S., C. Geel, A. Amann-Hildenbrand, B.M. Krooss, and R. Littke, 2019, Petrophysical and geochemical characterization of potential unconventional gas shale reservoirs in the southern Karoo Basin, South Africa: International Journal of Coal Geology, v. 212, 103249.

Nome, S., and P. Johnston, 2008, From shale to shining shale, a primer on North American gas shale plays: Deutsche Bank, 47 p.

Norton, M., and K. Tushingham, 2011, Integrating data crucial in shale plays: American Oil & Gas Reporter, v. 54, no. 3, p. 97-100.

Norton, M., and S. Maxwell, 2013, Integrated analysis predicts sweet spots: Hart Energy Publishing, E&P, v. 86, no. 8, p. 54, 56. (Montney Shale)

Nunn, J.A., 2012, Burial and thermal history of the Haynesville Shale: Implications for overpressure, gas generation, and natural hydrofracture: GCAGS Journal, v. 1, p. 81-96.

Nuttall, B.C., 2007, Analysis of Devonian shale in eastern Kentucky for carbon sequestration possibilities: Energeia, v. 18, no. 3, p. 1-3.

Nuttall, B.C., J.A. Drahovzal, C.F. Eble, and R.M. Bustin, 2009, Regional assessment of organic-rich gas shales for carbon sequestration: an example from the Devonian shales of the Illinois and Appalachian basins, Kentucky: AAPG Studies in Geology, v. 59, p. 173-190.

Nwabuoku, K.C., J. Mullen, and J. Lowry, 2011, Log data key in developing Eagle Ford: American Oil & Gas Reporter, v. 54, no. 4, p. 125-135.

Nwabuoku, K.C., 2012, Study optimizes Eagle Ford completion: American Oil & Gas Reporter, v. 55, no. 1, p. 77-85.

Nyahay, R., J. Leone, L. Smith, J. Martin, and D. Jarvie, 2007, Update on the regional assessment of gas potential in the Devonian Marcellus and Ordovician Utica shales in New York: AAPG Search and Discovery Article 10136. <http://www.searchanddiscovery.net/documents/2007/07101nyahay/index.htm>

Nygard, R., M. Gutierrez, R.K. Bratli, and K. Hoeg, 2006, Brittle-ductile transition, shear failure and leakage in shales and mudrocks: Marine and Petroleum Geology, v. 23, p. 201-212.

Obonyano, K., 2014, China’s Fuling field shale gas: Oil and Gas Investor, v. 34, no. 9, p. 19.

O’Brien, N.R., C.A. McRobbie, R.M. Slatt, and E.T. Baruch-Jurado, 2016, Unconventional gas–oil shale microfabric features relating to porosity, storage, and migration of hydrocarbons, in T. Olson, ed., Imaging unconventional reservoir pore systems: AAPG Memoir 112, p. 43-64.

O’Connor, S.A., S. Green, and A. Edwards, 2014, Geopressure crucial in resource plays: American Oil & Gas Reporter, v. 57, no. 8, p. 139-143.

Office of Technology Assessment, 1977, Status report on the gas potential from Devonian shales of the Appalachian Basin: Office of Technology Assessment, NTIS #PB-274856, 77 p.

Ohm, S.E., L. Larsen, S. Olaussen, K. Senger, T. Birchall, T. Demchuk, A. Hodson, I. Johansen, G.O. Titlestad, D.A. Karlsen, and A. Braathen, 2020, Discovery of shale gas in organic-rich Jurassic successions, Adventdalen, central Spitsbergen, Norway: Geological Society of Norway, Norwegian Journal of Geology, v. 99, no. 2, p. 349-376.

Ojha, S.P., and S. Misra, 2017, Saturation-dependent relative permeability in shales based on adsorption-desorption isotherm: AAPG Search and Discovery Article 41985, 26 p.

Okiongbo, K.S., A.C. Aplin, and S.R. Larter, 2005, Changes in Type II kerogen density as a function of maturity: evidence from the Kimmeridge Clay Formation: Energy & Fuels, v. 19, p. 2495-2499.

Oko, A.S., and M.S. Totten, Sr., 2006, Shale gas potential of the Floyd Shale in the Black Warrior Basin (abstract): GSA Abstracts with Programs, v. 38, no. 1, p. 31.

Olea, R.A., T.A. Cook, and J.L. Coleman, 2010, A methodology for the assessment of unconventional (continuous) resources with an application to the Greater Natural Buttes gas field, Utah: Natural Resources Research, v. 19, p. 237-251.

Olea, R.A., R.R. Charentier, T.A. Cook, D.W. Houseknecht, and C.P. Garrity, 2012, Geostatistical population-mixture approach to unconventional-resource assessment with an application to the Woodford gas shale, Arkoma Basin, eastern Oklahoma: Society of Petroleum Engineers, SPE Reservoir Evaluation & Engineering, v. 15, no. 5, p. 554-562.

Olson, T., ed., 2016, Imaging unconventional reservoir pore systems: AAPG Memoir 112, 231 p.

Olusanmi, E.O., and S.S. Sonnenberg, 2013, Concepts and methods for the recognition of cyclicity in the Middle Devonian Marcellus Shale: AAPG Search and Discovery Article #41166, 8 p. <http://www.searchanddiscovery.com/documents/2013/41166olusanmi/ndx_olusanmi.pdf>

Orem, W., 2013, Microbial production of natural gas from coal and organic-rich shale: U.S. Geological Survey Fact Sheet 2012-3109, 2 p.

Orem, W., C. Tatu, M. Varonka, H. Lerch, A. Bates, M. Engle, L. Crosby, and J. McIntosh, 2014, Organic substances in produced and formation water from unconventional natural gas extraction in coal and shale: : International Journal of Coal Geology, v. 126, p. 20-31.

Osborn, S.G., and J.C. McIntosh, 2010, Chemical and isotopic tracers of the contribution of microbial gas in Devonian organic-rich shales and reservoir sandstones, northern Appalachian Basin: Applied Geochemistry, v. 25, p. 456-471.

Osselin, F., M. Nightingale, G. Hearn, W. Kloppmann, E. Gaucher, C.R. Clarkson, and B. Mayer, 2018, Quantifying the extent of flowback of hydraulic fracturing fluids using chemical and isotopic tracer approaches: Applied Geochemistry, v. 93, p. 20-29.

Ostadhassan, M., K. Liu, C. Li, and S. Khatibi, 2018, Fine scale characterization of shale reservoirs: Springer Briefs in Petroleum Geoscience & Engineering, 99 p.

Osterlund, C.H., 2012, The Barnett Shale (Mississippian) in the central Midland Basin (Andrews, Ector, Martin, and Midland counties): Fort Worth, Texas Christian University, unpublished M.S. thesis.

Otis, C.B., 2012, Shale gas potential for the Ordovician shale succession of southern Ontario: AAPG Search and Discovery Article #50730, 27 p. <http://www.searchanddiscovery.com/documents/2012/50730otis/ndx_otis.pdf>

Ottmann, J., and K. Bohacs, 2014, Asking the right question; Conventional reservoirs hold keys to the ‘Un’s: AAPG Explorer, v. 35, no. 2, p. 26. <http://www.aapg.org/explorer/2014/02feb/conv-reserves0214.cfm>

Ou, C.H., R. Ray, C.C. Li, and H. Yong, 2016, Multi-index and two-level evaluation of shale gas reserve quality: Journal of Natural Gas Science and Engineering, v. 35, p. 1139-1145.

Ou, C., C. Li, S. Huang, and J.J. Sheng, 2019, Remigration and leakage from continuous shale reservoirs: Insights from the Sichuan Basin and it periphery, China: AAPG Bulletin, v. 103, p. 2009-2030.

Ouenes, A., 2013, ‘Shale capacity’ key in shale modeling: American Oil & Gas Reporter, v. 56, no. 9, p. 85-92.

Ouenes, A., 2013, Distribution of well performances in shale reservoirs and their predictions using the concept of shale capacity: AAPG Search and Discovery Article #41139, 20 p. <http://www.searchanddiscovery.com/documents/2013/41139ouenes/ndx_ouenes.pdf>

Ougier-Simonin, A., F. Renard, C. Boehm, and S. Vidal-Gilbert, 2016, Microfracturing and microporosity in shales: Earth-Science Reviews, v. 162, p. 198-226.

Paddock, D., C. Stolte, L. Zhang, J. Durrani, J. Young, and P. Kist, 2008, Seismic reservoir characterization of a gas shale utilizing azimuthal data processing, pre-stack seismic inversion, and Ant tracking: AAPG Search and Discovery Article #40310. <http://www.searchanddiscovery.net/documents/2008/08203paddock/index.htm?q=%2Btext%3A40310>

Pair, J., 2016, The Mancos Shale: time for another look: Hart Energy Publishing, E&P, v. 89, no. 8, p. 64-65.

Pair, J., 2016, Appalachian Basin shows upward trends in well characteristics: Hart Energy Publishing, E&P, v. 89, no.10, p. 78-79. (Marcellus; Utica)

Pair, J., 2016, US shale operators focus on completion optimization, best practices: Hart Energy Publishing, E&P, v. 89, no. 11, p. 30.

Paktinat, J., J. Pinkhouse, J.Fontaine, G. Lash, and G. Perry, 2009, Investigation of methods to improve Utica Shale hydraulic fracturing in the Appalachian Basin: AAPG Search and Discovery Article #40391. <http://www.searchanddiscovery.net/documents/2009/40391paktinat/index.htm>

Palmer, I., J. Cameron, Z. Moschovidis, and J. Ponce, 2009, Hydraulic fracturing—1. Natural fractures influence shear stimulation direction: Oil & Gas Journal, v. 107.12, p. 37-43.

Palmer, I., 2009, Getting natural gas out of shales and coals, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 306-328.

Pan, L., X. Xiao, H. Tian, Q. Zhou, J. Chen, T. Li, and Q. Wei, 2015, A preliminary study on the characterization and controlling factors of porosity and pore structure of the Permian shales in Lower Yangtze region, eastern China: International Journal of Coal Geology, v. 146, p. 68-78.

Pan, L., X. Xiao, H. Tian, Q. Zhou, and P. Cheng, 2016, Geological models of gas in place of the Longmaxi shale in southeast Chongqing, south China: Marine and Petroleum Geology, v. 73, p. 433-444.

Pan, L., X. Xiao, and Q. Zhou, 2016, The influence of soluble organic matter on shale reservoir characterization: Journal of Natural Gas Geoscience, v. 1, p. 243-249.

Pan, S., C. Zou, J. Li, Z. Yang, E. Liu, and Y. Han, 2019, Unconventional shale systems: A comparative study of the “in-source sweet spot” developed in the lacustrine Chang 7 Shale and the marine Barnett Shale: Marine and Petroleum Geology, v. 100, p. 540-550.

Pang, W., Y. Ye, and Z. Jin, 2019, Assessment of various approaches in the prediction of methane absolute adsorption in kerogen nanoporous media: Energy & Fuels, v. 33, p. 6258-6263.

Pang, Y., M.Y. Soliman, H. Deng, and X. Xie, 2017, Experimental and analytical investigation of adsorption effects on shale gas transport in organic nanopores: Fuel, v. 199, p. 272-288.

Pang, Y., Y. Tian, M.Y. Soliman, and Y. Shen, 2019, Experimental measurement and analytical estimation of methane adsorption in shale kerogen: Fuel, v. 240, p. 192-205. (adsorption vs. absorption)

Panja, P., M. Pathak, R. Velasco, and M. Deo, 2017, Study applies LSSVM to tight reservoirs: American Oil & Gas Reporter, v. 60, no. 3, p. 50-53.

Papazis, P.K., 2005, Petrographic characterization of the Barnett Shale, Fort Worth Basin, Texas: Austin, Texas, unpublished M.S. thesis, University of Texas-Austin, 142 p.

Paris, M., 2015, Formation evaluation in shale prospects experience in Argentina Vaca Muerta Formation: AAPG Search and Discovery Article #51082, 27 p. <http://www.searchanddiscovery.com/documents/2015/51082paris/ndx_paris.pdf>

Park, G., 2008, B.C. shales yield ‘very high’ reserves: Petroleum News, v. 13, no. 36.

Parker, A., D. Entzminger, J. Leone, M. Sonnenfeld, and L. Canter, 2014, Lessons learned from the KCC #503H Woodford horizontal well at Keystone South Field, Winkler County, TX: AAPG Search and Discovery Article 20254, 18 slides. <http://www.searchanddiscovery.com/documents/2014/20254parker/ndx_parker.pdf>

Parker, L., 2011, Mergers & acquisitions in the US shale gas sector: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 150-153.

Parker, M.A., E. Petre, D. Dreher, and D. Buller, 2009, Haynesville Shale–Hydraulic fracture stimulation approach: 2009 International Coalbed & Shale Gas Symposium, Tuscaloosa, AL, Paper 0913.

Parker, M., D. Buller, E. Petre, and D. Dreher, 2009, Haynesville Shale–Petrophysical evaluation: Paper No. SPE 1228937, SPE Rocky Mountain Petroleum Technology Conference, Denver, CO.

Parker, M., 2009, Haynesville Shale–Hydraulic fracture stimulation approach: Paper no. 0913, International Coalbed and Shale Gas Symposium, Tuscaloosa, AL.

Parker, M., 2009, Understanding process key to shale gas development: Oil & Gas Journal, v. 107.36, p. 50-55.

Parnell, J., C. Brolly, S. Spinks, and S. Bowden, 2016, Selenium enrichment in Carboniferous shales, Britain and Ireland: Problem or opportunity for shale gas extraction?: Applied Geochemistry, v. 66, p. 82-87.

Parris, T.M. and B.C. Nuttall, 2021, Berea Sandstone: New developments in a mature oil and gas play, eastern Kentucky and Ohio: AAPG Bulletin, v. 105, p. 485-492. (Sunbury Shale; Ohio Shale)

Parris, T.M., P.C. Hackley, S.F. Greb, and C.F. Eble, 2021, Molecular and isotopic gas composition of the Devonian Berea Sandstone and implications for gas evolution, eastern Kentucky: AAPG Bulletin, v. 105, p. 575-595. (Sunbury Shale; Ohio Shale)

Parshall, J., 2008, Barnett Shale showcases tight-gas development: Journal of Petroleum Technology, v. 60, no. 9, p. 49-55.

Partin, T.H., 2004, Demand and high price spurs a new era of drilling for New Albany Shale gas wells in Harrison County, Indiana, in J. Schieber and R. Lazar, eds., Devonian black shales of the eastern U.S.: New insights into sedimentology and stratigraphy from the subsurface and outcrops in the Illinois and Appalachian Basins: Indiana Geological Survey Open-File Study 04-05, p. 68-76.

Pashin, J.C., 2008, Gas shale potential of Alabama: 2008 International Coalbed & Shale Gas Symposium, paper 0808, 13 p. <http://www.gsa.state.al.us/img/shale/0808%20Pashin.pdf>

Pashin, J.C., 2009, Shale gas plays of the southern Appalachian thrust belt: 2009 International Coalbed & Shale Gas Symposium, Tuscaloosa, AL, Paper 0907, 14 p.

Pashin, J.C., D.C. Kopaska-Merkel, A.C. Arnold, M.R. McIntyre, and W.A. Thomas, 2012, Gigantic, gaseous mushwads in Cambrian shale: Conasauga Formation, southern Appalachians, USA: International Journal of Coal Geology, v. 103, p. 70-91.

Passey, Q.R., K.M. Bohacs, W.L. Esch, R. Klimentidis, and S. Sinha, 2010, From oil-prone source rock to gas-producing shale reservoir—Geologic and petrophysical characterization of unconventional shale-gas reservoirs: Society of Petroleum Engineers, Paper 131350, 29 p.

Passey, Q.R., K.M. Bohacs, W.L. Esch, R. Klimentidis, and S. Sinha, 2012, My source rock is now my reservoir—Geologic and petrophysical characterization of shale-gas reservoirs: AAPG Search and Discovery Article #80231, 47 p. <http://www.searchanddiscovery.com/documents/2012/80231passey/ndx_passey.pdf>

Passman, A., 2018, Approach models deep dry Uitca play: American Oil & Gas Reporter, v. 61, no. 13, p. 56-61.

Patchen, D.G., 1977, Subsurface stratigraphy and gas production of the Devonian shales in West Virginia: U.S. Department of Energy, Morgantown Energy Research Center, MERC/CR-77/5, 35 p.

Patchen, D.G., M.C. Behling, and M.E. Hohn, 1981, Atlas of Devonian shale gas production and potential in West Virginia: West Virginia Geological and Economic Survey Bulletin B-39, 22 p.

Patchen, D.G., and M.E. Hohn, 1993, Production and production controls in Devonian shales, West Virginia, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. L1-L28.

Patterson, A.A., 2010, Structural geology and hydrocarbon production, Barnett Shale (Mississippian), Fort Worth Basin, northwestern Johnson County, Texas: Fort Worth, Texas, Texas Christian University, unpublished M.S. thesis.

Patzek, T., F. Male, and M. Marder, 2014, A simple model of gas production from hydrofractured horizontal wells in shales: AAPG Bulletin, v. 98, p. 2507-2529.

Patzek, T.W., W. Saputra, W. Kirati, and M. Marder, 2019, Generalized extreme value statistics, physical scaling, and forecasts of gas production in the Barnett Shale: Energy & Fuels, v. 33, p. 12154-12169.

Pavluš, J., and P. Skupien, 2014, Lower Cretaceous black shales of the Western Carpathians, Czech Republic: Palynofacies indication of depositional environment and source potential for hydrocarbons: Marine and Petroleum Geology, v. 57, p. 14-24.

Pawlewicz, M.J., and J.R. Hatch, 2007, Petroleum assessment of the Chattanooga Shale/Floyd Shale – Paleozoic Total Petroleum System, Black Warrior Basin, Alabama and Mississippi: U.S. Geological Survey Digital Data Series DDS-69-I, chapter 3, 28 p.

Paxton, S.T., J.K. Pitman, S.A. Kinney, N.J. Gianoutsos, L.N. Pearson, K.J. Whidden, R.F. Dubiel, C.J. Schenk, L.A. Burke, T.R. Klett, H.M. Leathers-Miller, T.J. Mercier, and M.E. Tennyson, 2017, Assessment of undiscovered oil and gas resources in the Haynesville Formation, U.S. Gulf Coast, 2016: U.S. Geological Survey Fact Sheet 2017-3016, 2 p. <https://pubs.er.usgs.gov/publication/fs20173016>.

Paxton, S.T., 2017, USGS National and global oil and gas assessment project-Gulf Coast Mesozoic Province, Haynesville Formation assessment units: U.S. Geological Survey Data Release. <https://dx.doi.org/10.5066/F7DN439P>

Paxton, S.T., J.K. Pitman, S.A. Kinney, N.J. Gianoutsos, O.N. Pearson, K.J. Whidden, R.F. Dubiel, C.J. Schenk, L.A. Burke, T.R. Klett, H.M. Leathers-Miller, T.J. Mercier, S.S. Haines, B.A. Varela, P.A. Le, T.M. Finn, S.B. Gaswirth, S.J. Hawkins, K.R. Marra, and M.E. Tennyson, 2017, Assessment of undiscovered oil and gas resources in the Bossier Formation, U.S. Gulf Coast, 2016: U.S. Geological Survey Fact Sheet 2017–3015, 2 p. <https://pubs.er.usgs.gov/publication/fs20173015>

Paxton, S.T., 2017, USGS National and global oil and gas assessment project-Gulf Coast Mesozoic Province, Bossier Formation assessment units: U.S. Geological Survey Data Release. <https://dx.doi.org/10.5066/F7707ZP0>

Paxton, S.T., J.K. Pitman, S.A. Kinney, N.J. Gianoutsos, O.N. Pearson, K.J. Whidden, R.F. Dubiel, C.J. Schenk, L.A. Burke, T.R. Klett, H.M. Leathers-Miller, T.J. Mercier, S.S. Haines, B.A. Varela, P.A. Le, T.M. Finn, S.B. Gaswirth, S.J. Hawkins, K.R. Marra, and M.E. Tennyson, 2018, U.S. Geological Survey input-data forms for the assessment of the Upper Jurassic Haynesville Formation, U.S. Gulf Coast, 2016: U.S. Geological Survey, Open-File Report 2018-1130, 70 p. <https://pubs.er.usgs.gov/publication/ofr20181130>

Paxton, S.T., J.K. Pitman, S.A. Kinney, N.J. Gianoutsos, O.N. Pearson, K.J. Whidden, R.F. Dubiel, C.J. Schenk, L.A. Burke, T.R. Klett, H.M. Leathers-Miller, T.J. Mercier, S.S. Haines, B.A. Varela, P.A. Le, T.M. Finn, S.B. Gaswirth, S.J. Hawkins, K.R. Marra, and M.E. Tennyson, 2018, U.S. Geological Survey input-data forms for the assessment of the Upper Jurassic Bossier Formation, U.S. Gulf Coast, 2016: U.S. Geological Survey, Open-File Report 2018-1134, 56 p. <https://pubs.er.usgs.gov/publication/ofr20181134>

Paxton, S.T., 2018, Assessment of oil and gas resources in the Upper Jurassic Haynesville and Bossier Formations, U.S. Gulf Coast, 2016: U.S. Geological Survey, Open-File Report 2018-1135, 18 p. <https://pubs.er.usgs.gov/publication/ofr20181135>

Payne, S., 2007, Ray Hunt discusses best practices, the Barnett, taking risks: Oil and Gas Investor, v. 27, no. 10, p. 40-43.

Payne, S., and L. Haines, 2009, Executive of the year: flying strong: Petrohawk chairman, president and CEO Floyd Wilson hones in on the shales and shares his plans for growth: Oil and Gas Investor, v. 29, no. 2, p. 152-154.

Pearce, J.K., L. Turner, and D. Pandey, 2018, Experimental and predicted geochemical shale-water reactions: Roseneath and Murteree shales of the Cooper Basin: International Journal of Coal Geology, v. 187, p. 30-44.

Pearson, F.J., 1999, What is the porosity of a mudrock?, in A.C. Aplin, A.J. Fleet, and J.H.S. Macquaker, eds., Muds and mudstones: Physical and fluid-flow properties: London, Geological Society, Special Publication 158, p. 9-21.

Peebles, R., 2014, Production-focused seismic: insights from the Eagle Ford: Hart Energy Publishing, E&P, v. 87, no. 3, p. 48-50.

Pekarek, G., and F. Pichard, 2008, Fracture solutions unlock US gas shale plays: Hart Energy Publishing, E&P, v. 81, no. 3, p. 81-82.

Pekarek, G., 2008, Fracture solutions: Oil and Gas Investor, v. 28, no. 12, p. 108.

Peng, N., S. He, Q. Hu, B. Zhang, X. He, G. Zhai, C. He, and R. Yang, 2019, Organic nanopore structure and fractal charactertics of Wufeng and lower member of Longmaxi shales in southeastern Sichuan, China: Marine and Petroleum Geology, v. 103, p. 456-472.

Peng, Y., J. Liu, Z. Pan, H. Qu, and L. Connell, 2018, Evolution of shale apparent permeability under variable boundary conditions: Fuel, v. 215, p. 46-56.

Peng, Y., S. Guo, G. Zhai, D. Shi, and R. Chen, 2019, Determination of critical parameters for evaluating coal measure shale gas in China: Marine and Petroleum Geology, v. 109, p. 732-739.

Perez, H.J., 2006, High resolution facies analysis of the Barnett Shale, Newark field, Fort Worth Basin, north-central Texas: Norman, OK, University of Oklahoma, unpublished M.S. thesis, 51 p.

Perez, R., 2009, Quantitative petrophysical characterization of the Barnett Shale in Newark East field, Fort Worth Basin: Norman, University of Oklahoma, unpublished M.S. thesis, 125 p.

Perez, R., and K. Marfurt, 2013, Calibration of brittleness to elastic rock properties via mineralogy logs in unconventional reservoirs: AAPG Search and Discovery Article 41237, 32 p. (Barnett) <http://www.searchanddiscovery.com/documents/2013/41237perez/ndx_perez.pdf>

Perez, R.S., 2011, Integrated geomechanics and geological characterization of the Devonian-Mississippian Woodford Shale: Norman, University of Oklahoma, unpublished M.S. thesis, 110 p.

Perez Altamar, R., 2013, Brittleness estimation from seismic measurements in unconventional reservoirs: Application to the Barnett Shale: Norman, University of Oklahoma, unpublished PhD dissertation, 153 p.

Perkins, C.K., 2008, Logistics of Marcellus Shale stimulation: changing the face of completions in Appalachia: SPE-117754.

Pernia, D., K.K. Bissada, and J. Curiale, 2015, Kerogen based characterization of major gas shales: Effects of kerogen fractionation: Organic Geochemistry, v. 78, p. 52-61.

Pervikhina, M., B. Gurevich, D.N. Dewhurst, P. Golodoniuc, and M. Lebedev, 2015, Rock physics analysis of shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 191-205.

Petak, K.R., and B.B. Henning, 2009, Economy, shales key in price outlook: American Oil & Gas Reporter, v. 52, no. 12, p. 58-63.

Petak, K.R., 2010, Fundamentals point to demand growth, stronger prices in long term: American Oil & Gas Reporter,v. 53, no. 11, p. 82-92.

Peters, K.E., X. Xia, A.E. Pomerantz, and O.C. Mulllins, 2016, Geochemistry applied to evaluation of unconventional resources, in Y.Z. Ma and S.A. Holditch, eds., Unconventional oil and gas resources handbook; evaluation and development: New York, Elsevier, p. 71-126.

Petzet, A., 2002, Devon pressing Barnett Shale exploitation, expanding search: Oil & Gas Journal, v. 100, no. 28, p. 18-20.

Petzet, A., 2007, More operators eye Maverick shale gas, tar sand potential: Oil & Gas Journal, v. 105.30, p. 38-40.

Petzet, A., 2007, SEG: Geophysics role large in unconventionals: Oil & Gas Journal, v. 105.37, p. 28-30.

Petzet, A., 2008, BC’s Muskwa shale shaping up as Barnett gas equivalent: Oil & Gas Journal, v. 106.12, p. 40-41.

Petzet, A., 2008, Elusive Alabama shales need more work, Energen says: Oil & Gas Journal, v. 106.47, p. 31-33.

Petzet, A., 2009, Shale finds muddle Arctic development timing: Oil & Gas Journal, v. 107.40, p. 21-22.

Petzet, A., 2010, TransAtlantic pursues Thrace unconventional: Oil & Gas Journal, v. 108.37, p. 56-57. (NW Turkey Thrace Basin)

Petzet, A., 2010, Fruitland to Barnett to…: Oil & Gas Journal, v. 108.40, p. 12.

Petzet, A., 2011, Thick shale gas play emerging in Spain’s Cantabrian Basin: Oil & Gas Journal, v. 109.19, p. 52-53.

Petzet, A., 2012, Liard and the Besa River shale: Oil & Gas Journal, v. 110.8b, p. 14.

Petzet, A., 2013, Ukraine eying shale gas: Oil & Gas Journal, v. 111.2, p. 28.

Peza, E., E. Kvale, R. Hand, W. Harper, R. Jayakumar, D. Wood, E. Wigger, B. Dean, Z. Al-Jalal, and S. Ganpule, 2015, How fracture interference impacts Woodford Shale gas production: Shaletech Report, Special Supplement to World Oil, p. S-10 to S-14.

Pfau, K., R. King, D. Tonner, S. Hughes, and M. Dix, 2012, Wellsite geoscience enhances formation evaluation while drilling: World Oil, v. 233, no. 9, p. 51-59.

Pfau, K.D., and G.M. Oliver, 2011, Technology puts mineralogy on rig site: American Oil & Gas Reporter, v. 54, no. 11, p. 79-85.

Phan, T.T., A.N. Paukert Vankeuren, and J.A. Hakala, 2018, Role of water-rock interaction in the geochemical evolution of Marcellus Shale produced waters: International Journal of Coal Geology, v. 191, p. 95-111.

Phillips, J., 2015, Technology key to enabling refracs: American Oil & Gas Reporter, v. 58, no. 4, p. 70-73.

Piane, C.D., J. Bourdet, M. Josh, M.B. Clennell, W.D.A. Rickard, M. Saunders, N. Sherwood, Z. Li, D.N. Dewhurst, and M.D. Raven, 2018, Organic matter network in post-mature Marcellus Shale: Effects on petrophysical properties: AAPG Bulletin, v. 102, p. 2305-2332.

Picciano, L., 1995, Antrim Shale bibliography: selected references: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0296, 29 p.

Pickett, A., 2006, Oklahoma shales may prove look-alike: American Oil & Gas Reporter, v. 49, no. 5, p. 148-149.

Pickett, A., 2006, Perseverance, persistence have their parts to play in unlocking Rockies potential: American Oil & Gas Reporter, v. 49, no. 7, p. 146-155.

Pickett, A., 2006, Unconventional plays, deep gas driving activity in Appalachian Basin: American Oil & Gas Reporter, v. 49, no. 12, p. 112-119.

Pickett, A., 2006, Success in the Barnett has operators searching for look-alike shale plays: American Oil & Gas Reporter, v. 49, no. 13, p. 86-99.

Pickett, A., 2007, Improved technology, deep exploration putting new life in old basin: American Oil & Gas Reporter, v. 50, no. 11, p. 120-129.

Pickett, A., 2008, Horizontal drilling technology playing key role in development of giant Barnett gas shale: American Oil & Gas Reporter, v. 51, no. 8, p. 74-83.

Pickett, A., 2008, Independents hitting big in rapidly emerging Woodford, Fayetteville Shale gas plays: American Oil & Gas Reporter, v. 51, no. 9, p. 58-71.

Pickett, A., 2008, Huge potential, early results have operators hopping in Haynesville Shale: American Oil & Gas Reporter, v. 51, no. 10, p. 50-61.

Pickett, A., 2008, New opportunities arising for oil and natural gas across Texas Permian Basin: American Oil & Gas Reporter, October PBIOS 2008, p. 121-131.

Pickett, A., 2008, New unconventional plays usher in number of changes in midstream sector: American Oil & Gas Reporter, v. 51, no. 12, p. 72-85.

Pickett, A., 2008, Marcellus Shale play putting industry spotlight back on Appalachian Basin: American Oil & Gas Reporter, v. 51, no. 13, p. 132-143.

Pickett, A., 2009, New solutions emerging to treat and recycle water used in hydraulic fracs: American Oil & Gas Reporter, v. 52, no. 3, p. 66-73.

Pickett, A., 2009, Shale gas drilling, CO2 floods keep independents focused on Gulf Coast onshore fields: American Oil & Gas Reporter, v. 52, no. 4, p. 44-54.

Pickett, A., 2010, Present opportunity to create value in shales with liquids-rich gas: American Oil & Gas Reporter, v. 53, no. 3, p. 64-71.

Pickett, A., 2010, Technologies, methods reflect industry quest to reduce drilling footprint: American Oil & Gas Reporter, v. 53, no. 7, p. 70-81.

Pickett, A., 2010, Marcellus Shale’s potential sparks surging activity in Appalachian Basin: American Oil & Gas Reporter, v. 53, no. 8, p. 188-199.

Pickett, A., 2010, Excitement over liquids-rich shale plays driving new midstream capacity connection: American Oil & Gas Reporter, v. 53, no. 11, p. 62-73.

Pickett, A., 2010, ‘Supergiant’ Marcellus driving surging activity across Appalachian Basin: American Oil & Gas Reporter, v. 53, no. 12, p. 50-65.

Pickett, A., 2010, Huron Shale: Oil and Gas Investor, v. 30, no. 12, p. 81-83.

Pickett, A., 2010, Unconventional plays pep up the Permian: Houston, Hart Energy Publishing, Permian Basin: the playbook, p. 18-29.

Pickett, A., 2011, Midstream infrastructure growth matches escalating shale play activity: American Oil & Gas Reporter, v. 54, no. 1, p. 60-73.

Pickett, A., 2011, Producers, midstream firms continue to build momentum across Marcellus Shale play (part 3): American Oil & Gas Reporter, v. 54, no. 3, p. 78-88.

Pickett, A., 2011, Connections designed for shale plays: American Oil & Gas Reporter, v. 54, no. 9, p. 81-89.

Pickett, A., 2011, Shale plays driving drilling fluid R&D: American Oil & Gas Reporter, v. 54, no. 10, p. 109-117.

Pickett, A., 2011, Vast resource potential has operators gearing up to test Utica Shale formation: American Oil & Gas Reporter, v. 54, no. 11, p. 112-126.

Pickett, A., 2013, Best practices establish consistency, improve performance: American Oil & Gas Reporter, v. 56, no. 4, p. 160-169. (Eagle Ford)

Pickett, A., 2013, New opportunities abound in Mid-Continent plays: American Oil & Gas Reporter, v. 56, no. 5, p. 114-122. (Mississippian Lime, Woodford SCOOP)

Pickett, A., 2013, Marcellus, Utica shales make northeast focal point of growing U.S. production: American Oil & Gas Reporter, v. 56, no. 11, p. 42-55.

Pickett, A., 2014, Unconventional resources, part one: Independent operators hone best drilling, completion practices in unconventional plays: American Oil & Gas Reporter, v. 57, no. 1, p. 74-86.

Pickett, A., 2014, Marcellus and Utica: Results show opportunities await in Appalachia: American Oil & Gas Reporter, v. 57, no. 9, p. 136-147.

Pickett, A., 2014, Independents find ways to improve efficiency in Marcellus, Utica: American Oil & Gas Reporter, v. 57, no. 13, p. 110-119.

Pickett, A., 2015, Independents’ best practices increase EURs in resource plays, part 1: American Oil & Gas Reporter, v. 58, no. 1, p. 84-91.

Pickett, A., 2015, Leading operators improve efficiency and effectiveness of multiwell pad operations: American Oil & Gas Reporter, v. 58, no. 4, p. 118-129.

Pickett, A., 2015, Innovative thinking scores major successes in the SCOOP and STACK: American Oil & Gas Reporter, v. 58, no. 5, p. 112-122.

Pickett, A., 2015, Operators finding record wells and new frontiers in Marcellus/Utica: American Oil & Gas Reporter, v. 58, no. 7, p. 108-115.

Pickett, A., 2015, Soaring well productivities, emerging deep dry gas play drive Marcellus, Utica growth: American Oil & Gas Reporter, v. 58, no. 11, p. 92-101.

Pickett, A., 2016, Companies thriving in Marcellus/Utica: American Oil & Gas Reporter, v. 59, no. 7, p. 62-69.

Pickett, A., 2016, Marcellus and Utica double the fun in venerable Appalachian Basin: American Oil & Gas Reporter, v. 59, no. 12, p. 82-89.

Pickett, A., 2017, Extended lateral lengths, optimized completions define Eclipse’s best practices: American Oil & Gas Reporter, v. 60, no. 3, p. 42-49.

Pickett, A., 2017, Rejuvenated Appalachian Basin provides economic boost to northeastern United States: American Oil & Gas Reporter, v. 60, no. 8, p. 78-87. (Marcellus)

Pierard, C., H. Jaglan, K. Rimaila, A. Huck, F. Brauwer, S. Jensen, and E. von Lunen, 2014, Unconventional shale gas reservoir characterization using the HitCube approach — Mappinig of marl-rich mudflows in the Horn River Basin: AAPG Search and Discovery Article 41345, 9 slides. <http://www.searchanddiscovery.com/documents/2014/41345pierard/ndx_pierard.pdf>

Pierre, A.O.E., K. Mageau, P. Miller, A. Cox, A. Shelby-James, and T. Branter, 2019, Sweet spot and porosity development in an unconventional source rock play, in Carbonate pore systems: New developments and case studies: SEPM Special Publication No. 112, p. 73-93.

Pike, B., 2013, G&G advances critical for shale definition and efficient development: World Oil, v. 234, no. 7, p. S-127 to S-133.

Pike, W.J., 2012, International assessments continue, development lagging: World Oil, v. 233, no. 12, p. 88-94. (international gas shale)

Pinto, E., J. Mota, J. Grable, and D. Ward, 2013, Improving directional drilling tool reliability for HPHT horizontal wells in the Haynesville Shale: World Oil, v. 234, no. 2, p. 97-101.

Pish, T., R. Killian, and I. Scuseria, 2011, Regional spotlight: Utica Shale: Oil and Gas Investor, v. 31, no. 6, p. 15.

Pish, T., and R. Killian, 2012, Regional spotlight: Wolfcamp Shale: Oil and Gas Investor, v. 32, no. 3, p. 17.

Pitcher, J., 2011, Geosteering in unconventional shale reservoirs has potential: Hart Energy Publishing, E&P, v. 84, no. 4, p. 65, 67.

Pitcher, J., 2015, Achieving operational efficiency in unconventional stimulations: Hart Energy Publishing, E&P, v. 88, no. 2, p. 58, 60.

Polito, N., O. Hummes, P. Bond, A. Jones, W. Symons, M. Bishop, A. Serdy, and S. Pokrovsky, 2012, Technologies key to Marcellus drilling: American Oil & Gas Reporter, v. 55, no. 12, p. 90-97.

Pollastro, R.M., R.J. Hill, D.M. Jarvie, and M.E. Henry, 2003, Assessing undiscovered resources of the Barnett-Paleozoic total petroleum system, Bend Arch-Fort Worth Basin Province, Texas: AAPG Search and Discovery Article #10034, 17 p. (<http://www.searchanddiscovery.com/documents/pollastro/index.htm>)

Pollastro, R.M., R.J. Hill, T.A. Ahlbrandt, R.R. Charpentier, T.A. Cook, T.R. Klett, M.E. Henry, and C.J. Schenk, 2004, Assessment of undiscovered oil and gas resources of the Bend Arch-Fort Worth Basin Province of North-Central Texas and southwestern Oklahoma: U.S. Geological Survey Fact Sheet 2004-3022, 2 p. (<http://pubs.usgs.gov/fs/2004/3022/>)

Pollastro, R.M., D.M. Jarvie, R.J. Hill, and C.W. Adams, 2007, Geologic framework of the Mississippian Barnett Shale, Barnett-Paleozoic total petroleum system, Bend arch-Fort Worth Basin, Texas: AAPG Bulletin, v. 91, p. 405-436.

Pollastro, R.M., 2007, Total petroleum system assessment of undiscovered resources in the giant Barnett Shale continuous (unconventional) gas accumulation, Fort Worth Basin, Texas: AAPG Bulletin, v. 91, p. 551-578.

Poludasu, S., O. Awoleke, M. Ahmadi, and C. Hanks, 2016, Using experimental design and response surface methodology to model induced fracture geometry in Shublik shale: Journal of Unconventional Oil and Gas Resources, v. 15, p. 43-55.

Pomerantz, A.E., K.D. Bake, P.R. Craddock, K.W. Kurzenhauser, B.G. Kodalen, S. Mitra-Kirtley, and T.B. Bolin, 2014, Sulfur speciation in kerogen and bitumen from gas and oil shales: Organic Geochemistry, v. 68, p. 5-12.

Poon, A., 2011, Low-frequency seismic illuminates shale plays: Hart Energy Publishing, E&P, v. 84, no. 3, p. 84-85.

Pope, C., B. Peters, T. Benton, and T. Palisch, 2009, Factors key in Haynesville completions: American Oil & Gas Reporter, v. 52, no. 12, p. 81-93.

Popova, O., G. Long, J. Little, C. Peterson, N. Davis, E. Geary, A. Butterfield, S. Grape, E. Panarelli, A. Volke, and B. Mariner-Volpe, 2018, Marcellus, Utica/Point Pleasant provide 91% of U.S. shale gas production growth since start of 2012: AAPG Search and Discovery Article #70324, 38 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/70324popova/ndx_popova.pdf.html>

Popovici, A.M., T.J. Moser, and I. Sturzu, 2014, Method images small-scale fractures: American Oil & Gas Reporter, v. 57, no. 1, p. 89-93.

Portas Arroyal, R.M., 2009, Characterization and origin of fracture patterns in the Woodford Shale in southeastern Oklahoma for application to exploration and development: Norman, University of Oklahoma, unpublished M.S. thesis, 113 p.

Poruban, S., 2012, Shale gas production must hinge on environmental safety, panelists say: Oil & Gas Journal, v. 110.3a, p. 22.

Potter, C.J., C.J. Schenk, R.R. Charpentier, S.B. Gaswirth, T.R. Klett, H.M. Leathers, M.E. Brownfield, T.J. Mercier, M.E. Tennyson, and J.K. Pitman, 2015, Assessment of Paleozoic shale gas resources in the Sichuan Basin of China, 2015: U.S. Geological Survey Fact Sheet 2015-3053, 4 p. <http://pubs.er.usgs.gov/publication/fs20153053>

Potter, C.J., C.J. Schenk, J.K. Pitman, T.R. Klett, M.E. Tennyson, S.B. Gaswirth, H.M. Leathers-Miller, T.M. Finn, M.E. Brownfield, T.J. Mercier, K.R. Marra, and C.A. Woodall, 2018, Assessment of undiscovered continuous oil and gas resources of Upper Cretaceous shales in the Songliao Basin of China, 2017: U.S. Geological Survey Fact Sheet 2018-3014, 2 p. <https://pubs.er.usgs.gov/publication/fs20183014>

Potter, C.J., 2018, Paleozoic shale gas resources in the Sichuan Basin, China: AAPG Bulletin, v. 102, p. 987-1009.

Potter, P.E., J.B. Maynard, and W.A. Pryor, 1980, Final report of special geological, geochemical, and petrological studies of the Devonian shales in the Appalachian Basin: U.S. Department of Energy Eastern Gas Shales Project, Contract DE-AC21-76MC05201, 86 p.

Powell, G., 2010, Shale energy: Developing the Barnett—Lateral lengths increasing in Barnett Shale: World Oil, v. 231, no. 8.

Powell, M.E., Jr., 2007, Bigger in the Barnett: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 12-13.

Powell, W.D., 2005, Horizontal drilling helping Devon step outside core Barnett Shale area, grow gas production: American Oil & Gas Reporter, v. 48, no. 2, p. 105-111. (<http://www.energyconnect.com/pttc/BSR/0205reservoiroptim.pdf>)

Powell, W.D., 2006, Start with the rock: Hart Energy Publishing, E&P, v. 79, no. 4, p. 73-74. (<http://www.corelab.com/rm/irs/publications/Articles/Frontier-Core.pdf>)

Powers, B., 2005, The bright future of shale gas: US Energy Investor, Issue 3, p. 1-3.

Prado, L., 2011, The coolest activity from the hottest shale plays: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 2-13.

Prathimon, P.T., S. Sharma, A. Roy, and J. Singh, 2018, Lithofacies and semi-quantitative analysis by XRD/SEM for evaluating the impact of mineralogy on reservoir quality of organic shale in Cambay Basin: AAPG Search and Discovery Article #11083, 6 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/11083prathimon/ndx_prathimon.pdf.html>

Pratt, D., B.J. Hulsey, and B.M. Cornette, 2010, Microseismic data help avoid faults: American Oil & Gas Reporter, v. 53, no. 13, p. 91-95.

Pratt, T.J., and L.R.G. Baez, 2003, Critical data requirements for coal and gas shale resource assessment: Tuscaloosa, Alabama, 2003 International Coalbed Methane Symposium, Paper 367, 22 p.

Preckel, R.W., and P.E. Vivian, 2011, Horizontal shale drilling fuels strong consumption, OCTG capacity expansions: American Oil & Gas Reporter, v. 54, no. 9, p. 72-78.

Presley, J., 2013, Hydraulic fracturing: New perspective leads to successes: Hart Energy Publishing, E&P, v. 86, no. 2, p. 38-44. (water usage in fracturing)

Presley, J., 2015, Fine-tuning the Marcellus: Hart Energy Publishing, E&P, v. 88, no. 9, p. 27.

Presley, J., 2017, Completions tech continues to evolve, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 48-55.

Presley, J., 2017, Solving the production puzzle, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 56-63.

Presley, J., 2017, New technologies deliver cleaner air, more water options, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 64-71.

Presley, J., 2017, Drilling commences in the Bowland: Hart Energy Publishing, E&P, v. 90, no. 10, p. 23. (U.K.)

Presley, J., 2017, Happiest in the middle: Hart Energy Publishing, E&P, v. 90, no. 11, p. 27. (STACK; Sooner Trend; Osage)

Presley, J., 2018, Going global: Hart Energy Publishing, E&P, v. 91, no. 5, p. 78-79. (Argentina, Middle East, UK)

Presley, J., 2019, Scratching the subsurface: Hart Energy Publishing, E&P, v. 92, no. 7, p. 22-26.

Presley, J., 2020, Cracking the shale code: Hart Energy Publishing, E&P, v. 93, no. 6, p. 22-28.

Price, H., 2012, Unconventional prosperity: Can Europe duplicate the U.S. shale boom?: EnergyWorkforce, Fall 2012 supplement to Oil and Gas Journal, v. 110.10, p. PEJ 6.

Price, T., 2011, What the “shale” is happening in America?: World Oil, v. 232, no. 12, p. 74.

Priestman, A., 2003, September feature, gas shales: Coalbed Natural Gas Alert, no. 24, p. 4-9.

Priestman, A., 2006, May feature, shale gas: Coalbed Natural Gas Report, no. 55, p. 9-18.

Priestman, A., 2006, June feature, Fayetteville Shale: Coalbed Natural Gas Report, no. 56, p. 10-17.

Priestman, A., 2007, January feature, Woodford Shale Oklahoma: Unconventional Natural Gas Report, no. 1, p. 12-25.

Priestman, A., 2007, March feature, Floyd Shale: Unconventional Natural Gas Report, no. 3, p. 13-21.

Priestman, A., 2007, May feature, Palo Duro Basin Lower Pennsylvanian Bend Shale: Unconventional Natural Gas Report, no. 5, p. 16-25.

Priestman, A., 2007, July feature, Bossier Shale and tight gas: Unconventional Natural Gas Report, no. 7, p. 15-25.

Priestman, A., 2007, August feature, Conasauga Shale: Unconventional Natural Gas Report, no. 8, p. 14-22.

Priestman, A., 2007, October feature, Marcellus Shale: Unconventional Natural Gas Report, no. 10, p. 14-22.

Priestman, A., 2007, November feature, Utica Shale: Unconventional Natural Gas Report, no. 11, p. 19-29.

Priestman, A., 2007, December feature, Gothic Shale: Unconventional Natural Gas Report, no. 12, p. 18-25.

Priestman, A., 2008, January feature, Baxter and Hilliard Shales: Unconventional Natural Gas Report, no. 13, p. 19-25.

Priestman, A., 2008, June feature, Haynesville Shale: Unconventional Natural Gas Report, no. 18, p. 18-33.

Priestman, A., 2008, July feature, Montney Formation: Unconventional Natural Gas Report, no. 19, p. 18-29.

Priestman, A., 2008, August feature, Mancos Shale: Unconventional Natural Gas Report, no. 20, p. 23-34.

Priestman, A., 2008, September feature, Muskwa Shale: Unconventional Natural Gas Report, no. 21, p. 23-35.

Priestman, A., 2008, Bibliography: selected references for gas shales, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 244-373.

Priestman, A., 2009, British Columbia new hub for unconventional plays: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 30, 32.

Prose, D.A., 2005, The Delaware Basin Barnett Shale: the next big shale play?, in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 257-260.

Pyron, A.J., J.H. Viellenave, and J. Fontana, 2003, New York Devonian black shale: a Barnett-like play in waiting: Oil & Gas Journal, v. 101.2, p. 36-42.

Pyron, A.J., 2007, Newark Basin log data indicate big gas potential in Pennsylvania, New Jersey: Oil & Gas Journal, v. 105.6, p. 36-40.

Pyron, A.J., 2008, Appalachian Basin’s Devonian: more than a ‘new Barnett Shale’: Oil & Gas Journal, v. 106.15, p. 38-40.

Pyron, A.J., 2011, Marcellus shale gas, hydrogeology, and the truth: Oil & Gas Journal, v. 109.13, p. 60-61.

Qajar, A., H. Daigle, and M. Prodanović, 2015, The effects of pore geometry on adsorption equilibrium in shale formations and coal-beds: Lattice density functional theory study: Fuel, v. 163, p. 205-213.

Qajar, A., H. Daigle, and M. Prodanović, 2015, Methane dual-site adsorption in organic-rich shale-gas and coalbed systems: International Journal of Coal Geology, v. 149, p. 1-8.

Qi, Y., Y. Ju, C. Huang, H. Jhu, Y. Bao, J. Wu, S. Meng, and W. Chen, 2019, Influences of organic matter and kaolinite on pore structures of transitional organic-rich mudstone with an emphasis on S2 controlling specific surface area: Fuel, v. 237, p. 860-873.

Qian, B., J. Zhu, H. Yang, X. Shi, and J. Li, 2017, Hydration improves Longmaxi shale fractures: Oil & Gas Journal, v. 115.12, p. 54-59.

Qian, K., J. Ning, X. Liu, and Y. Zhang, 2019, A rock physics driven Bayesian inversion for TOC in the Fuling shale gas reservoir: Marine and Petroleum Geology, v. 102, p. 886-898.

Qiao, J., R. Littke, L. Zieger, Z. Jiang, and R. Fink, 2020, Controls on gas storage characteristics of Upper Paleozoic shales from the southeastern Ordos Basin: Marine and Petroleum Geology, v. 117, 104377.

Qin, J., S. Wang, H. Sanei, C. Jiang, Z. Chen, S. Ren, X. Xu, J. Yang, and N. Zhong, 2018, Revelation of organic matter sources and sedimentary environment characteristics for shale gas formation by petrographic analysis of middle Jurassic Dameigou formation, northern Qaidam Basin, China: International Journal of Coal Geology, v. 195, p. 373-385.

Qin, S., Y. Zhang, C. Zhao, and Z. Zhou, 2018, Geochemical evidence for in situ accumulation of tight gas in the Xujiahe Formation coal measures in the central Sichuan Basin, China: International Journal of Coal Geology, v. 196, p. 173-184.

Qiu, Z., C. Zou, X. Li, H. Wang, D. Dong, B. Lu, S. Zhou, Z. Shi, Z. Feng, and M. Zhang, 2018, Discussion on the contribution of graptolite to organic enrichment and gas shale reservoir: A case study of the Wufeng-Longmaxi shales in South China: Journal of Natural Gas Geoscience, v. 3, p. 147-156.

Qu, Y., W. Sun, S. Guo, S. Shao, and X. Lv, 2019, A gas-content calculation model for terrestrial shales in the Kuqa Depression, the Tarim Basin, western China: Interpretation, v. 7, no. 2, p. T513-T524.

Qu, Z., J. Sun, J. Shi, Z. Zhan, Y. Zou, and P. Peng, 2016, Characteristics of stable carbon isotopic composition of shale gas: Journal of Natural Gas Geoscience, v. 1, p. 147-155.

Quezada, O., and P.M. Duncan, 2015, Cracking the Wattenberg field: Hart Energy Publishing, E&P, v. 88, no. 2, p. 82-85.

Quirein, J., D. Buller, J. Witkowsky, and J. Truax, 2012, Integrating core data and wireline data for formation evaluation and characterization of shale gas reservoirs: AAPG Search and Discovery Article #41073, 22 p. <http://www.searchanddiscovery.com/documents/2012/41073quirein/ndx_quirein.pdf>

Rabe, C., R.C.R. Filho, J. P.Salazar, F.D. Pasqua, G.C. Stael, and L.A.P. Gamboa, 2021, Brittleness modeling selects optimum stimulation zone in shaly source rocks in the Whangai Formation, New Zealand: AAPG Bulletin, v. 105, p. 329-355.

Rach, N.M., 2004, Drilling expands in Texas’ largest gas field: Oil & Gas Journal, v. 102.3, p. 45-50.

Rach, N.M., 2004, What a typical small operator experiences in the Barnett Shale play: Oil & Gas Journal, v. 102.3, p. 46-47.

Rach, N.M., 2005, Small operator pumps big frac in north Texas Barnett Shale: Oil & Gas Journal, v. 103.9, p. 41-44.

Rach, N.M., 2007, Triangle Petroleum, Kerogen Resources drilling Arkansas’ Fayetteville shale gas: Oil & Gas Journal, v. 105.35, p. 59, 62.

Rach, N.M., 2008, DeSoto drilling for Southwestern Energy: Oil & Gas Journal, v. 106.21, p. 43-45.

Rach, N.M., 2008, Operators increase stakes in Marcellus: Oil & Gas Journal, v. 106.37, p. 50-57.

Rach, N.M., 2008, Triangle developing shale gas onshore NS: Oil & Gas Journal, v. 106.48, p. 35-38. (Horton Bluff shales)

Rach, N.M., 2009, CNX Gas drills record Marcellus Shale well: Oil & Gas Journal, v. 107.3, p. 51-55.

Rach, N.M., 2009, Drilling horizontals in the Marcellus Shale: Hart Energy Publishing, E&P, v. 82, no. 11, p. 29.

Rach, N.M., 2011, New approaches characterize mudrocks: World Oil, v. 232, no. 2, p. 15.

Rach, N.M., 2011, Research at Cornell University tempers shale gas debate: World Oil, v. 232, no. 12, p. 17.

Rach, N.M., 2012, The great Alaska shale rush: World Oil, v. 233, no. 3, p. 17.

Radzinski, P., 2013, Azimuthal gamma ray optimizes shale development: Hart Energy Publishing, E&P, v. 86, no. 7, p. 50, 52.

Ragsdale, R., 2005, Southwestern Energy making Arkansas’ Fayetteville the next gas shale success story: American Oil & Gas Reporter, v. 48, no. 12, 52-63.

Rahimi-Zeynal, A., M. Mueller, and S. Kashikar, 2014, From correlation to production: Hart Energy Publishing, E&P, v. 87, no. 7, p. 52-54. (Horn River; microseismic)

Rahman, H.M., M. Kennedy, S. Lőhr, and D.N. Dewhurst, 2017, Clay-organic association as a control on hydrocarbon generation in shale: Organic Geochemistry, v. 105, p. 42-55.

Ran, B., S. Liu, L. Jansa, and C. Zhang, 2016, Conditions of Longmaxi Shale in the Upper Yangtze Block, south China: Acta Geologica Sinica, v. 90, p. 2182-2205.

Rangel, J., and A. Poon, 2013, Advances improve drilling, completion: American Oil & Gas Reporter, v. 56, no. 3, p. 92-97.

Rani, S., B.K. Prusty, and S.K. Pal, 2015, Methane adsorption and pore characterization of Indian shale samples: Journal of Unconventional Oil and Gas Resources, v. 11, p. 1-10.

Ransone, J.R., and P. Williams, 2003, The Barnett barrels along: Oil and Gas Investor, v. 23, no. 12, p. 41-45.

Rao, V., and R. Knight, 2016, Sustainable shale oil and gas: Analytical chemistry, geochemistry and biochemistry methods: Elsevier, 188 p.

Rasouli, V., 2015, Geomechanics of gas shales, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 169-190.

Ratchford, M.E., L.C. Bridges, D. Jordan, W.G. Dow, A. Colbert, and D.M. Jarvie, 2006, Organic geochemistry and thermal maturation analysis within the Fayetteville Shale study area—eastern Arkoma Basin and Mississippi Embayment regions, Arkansas: Arkansas Geological Survey, Information Circular 37, CD-Rom.

Rauch, C., K. Barrie, S.C. Collins, M.J. Hornbach, and C. Brokaw, 2018, Heat flow and thermal conductivity measurements in the northeastern Pennsylvania Appalachian Basin depocenter: AAPG Bulletin, v. 102, p. 2155-2170. (Marcellus)

Ray, E.O., 1976, Devonian shale development in eastern Kentucky, in Natural gas from unconventional geologic sources: Washington, D.C., National Academy of Sciences, p. 100-112.

Raza, A., G. Meiyu, R. Gholami, R. Rezaee, V. Rasouli, M. Sarmadivaleh, and A.A. Bhatti, 2018, Shale gas: A solution for energy crisis and lower CO2 emission in Pakistan: Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 10 p.

Rebec, T., and M. Edrich, 2010, Full-azimuth 3-D locates sweet spots: American Oil & Gas Reporter, v. 53, no. 3, p. 89-95.

Rebec, T., and A. Chaveste, 2012, Method locates Marcellus sweet spots: American Oil & Gas Reporter, v. 55, no. 8, p. 198-203. (wide-angle surface seismic)

Rebec, T., M. Pareja, and Z. Zhao, 2013, Reducing risk and improving production in unconventional plays: Interpretation, v. 1, no. 2, p. SB3-SB14.

Redden, J., 2012, Barnett Shale gas production rises despite lower rig count: World Oil, v. 233, no. 2, p. 82-89.

Redden, J., 2012, Horn River Kitimat LNG terminal entices gas producers: World Oil, v. 233, no. 4, p. 64-76.

Redden, J., 2012, Eagle Ford rig count down; operators cautiously bullish as permits, new wells soar: World Oil, v. 233, no. 7, p. 52-64.

Redden, J., 2012, Haynesville operators look to exports for relief: World Oil, v. 233, no. 10, p. 96-100.

Redden, J., 2013, Barnett Shale: Graybeard play producing more gas from less drilling: World Oil, v. 234, no. 2, p. 82-87.

Redden, J., 2013, Drilling the unconventionals for maximum reservoir exposure: World Oil, v. 234, no. 7, p. S-135 to S-145.

Redden, J., 2013, Haynesville Bossier shale signs of life starting to emerge: World Oil, v. 234, no. 10, p. 124-130.

Redden, J., 2014, Marcellus/Utica operators turn up the heat in frigid NE: World Oil, v. 235, no. 2, p. 96-103.

Redden, J., 2014, Drilling the unconventionals: Shale focus shifts to increasing IP rates, EUR: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-73 to S-77.

Redden, J., 2014, Canadian shales; tight oil dominates, but gas showing some signs of life: World Oil, v. 235, no. 5, p. 86-96.

Redden, J., 2014, New technologies tackle drilling efficiency and HSE issues: Shale Technology Review, supplement to World Oil, v. 235, no. 7, p. S-135 to S-138.

Redden, J., 2014, Haynesville LNG prospects elevate otherwise-glum outlook: World Oil, v. 235, no. 9, p. 78-85.

Redden, J., 2014, Permian Basin multi-zone play chugs on amid lower prices: World Oil, v. 235, no. 12, p. 76-85.

Redden, J., 2015, Woodford/Granite Wash: crude oil price turbulence could dim glow of Continental’s Springer shale discovery: World Oil, v. 236, no. 1, p. 98-106.

Redden, J., 2015, Marcellus/Utica near-term uncertainties reign in low-cost play: World Oil, v. 236, no. 2, p. 112-119.

Redden, J., 2015, Permian shales; multi-zone play grabs lion’s share of deflated budgets: World Oil, v. 236, no. 4, p. 110-121.

Redden, J., 2015, Canadian shales drilling, LNG prospects face stiff headwinds: World Oil, v. 236, no. 5, p. 64-73.

Redden, J., 2015, China, Australia shales; high hopes, but results slim so far: World Oil, v. 236, no. 7, p. 72-78.

Redden, J., 2015, Argentina/Mexico shales; prime reserves, but widely different near-term prospects: World Oil, v. 236, no. 11, p. 70-76. (Vaca Muerta shale)

Redden, J., 2015, Haynesville-Bossier shale die-hards say upsized completions, refracs boost margins: World Oil, v. 236, no. 12, p. 62-66.

Redden, J., 2016, Woodford Shale: SCOOP, Stack sweet spots provide some relief: World Oil, v. 237, no. 1, p. 68-74.

Redden, J., 2016, Marcellus-Utica shale: low costs, new takeaway capacity may spur late 2016 recovery: World Oil, v. 237, no. 2, p. 78-82.

Redden, J., 2016, Canadian shales: a lot of pain, little gain seen in ’16: World Oil, v. 237, no. 4, p. 84-90.

Redden, J., 2016, Permian shales: Best bet in a field of also-rans: World Oil, v. 237, no. 5, p. 60-65.

Redden, J., 2016, Australia-China shales; despite state policies, tough economics stymie gas: World Oil, v. 237, no. 7, p. 92-98.

Redden, J., 2017, Haynesville-Bossier shale: brighter gas fundamentals spark second wind: World Oil, v. 238, no. 12, p. 64-68.

Redden, J., 2018, Canadian shales: more wells in ’18, but full recovery remains elusive: World Oil, v. 239, no. 1, p. 60-64.

Redden, J., 2018, Marcellus-Utica shales: record laterals help feed new pipelines, plants: World Oil, v. 239, no. 2, p. 70-74.

Redden, J., 2018, Haynesville-Bossier shales motley outlook amid new highs in gas production, prices: World Oil, v. 239, no. 12, p. 60-63.

Redden, J., 2019, Marcellus–Utica shales: feeding a budding petrochemical colossus: World Oil, v. 240, no. 2, p. 60-63.

Redden, J., 2019, Haynesville-Bossier shale: A “cowboy” bucks headwinds, beefs up gas holdings: World Oil, v. 240, no. 12, p. 54-58.

Reed, R.M., R.G. Loucks, and S.C. Ruppel, 2014, Comment on “Formation of nanoporous pyrobitumen residues during maturation of the Barnett Shale (Fort Worth Basin)” by Bernard et al. (2012): International Journal of Coal Geology, v. 127, p. 111-113.

Reeves, S.R., V.A. Kuuskraa, and D.G. Hill, 1996, Unconventional gas, 3: new basins invigorate U.S. gas shales play: Oil & Gas Journal, v. 94, no. 4, p. 53-58.

Reeves, S.R., G.J. Koperna, and V.A. Kuuskraa, 2007, Unconventional gas—4. Technology, efficiencies keys to resource expansion: Oil & Gas Journal, v. 105.37, p. 46-51.

Refunjol, X.E., K.J. Marfurt, and J.H. Le Calvez, 2011, Inversion and attribute-assisted hydraulically induced microseismic fracture characterization in the North Texas Barnett Shale: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 292-299.

Regener, W.E., J.M. Byl, and J.M. Hill, 2008, Shale in the Arkoma and Ardmore Basins: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 24-25.

Reid, J.C., K.B. Taylor, and J.D. Simons, 2011, North Carolina shale gas—a progress report: Sanford sub-basin, Deep River basin, Lee, Chatham, and Moore counties: AAPG Search and Discovery Article 40704, 32 p. <http://www.searchanddiscovery.com/documents/2011/40704reid/ndx_reid.pdf>

Reine, C., and S. Lovric, 2014, Incorporating fault intensity and AVO inversion to characterize a shale gas reservoir: AAPG Search and Discovery Article 41346, 9 slides. <http://www.searchanddiscovery.com/documents/2014/41346reine/ndx_reine.pdf>

Remington, L., and J. Simmons, 2009, The legendary Barnett: Houston, Hart Energy Publishing, Barnett Playbook, p. 4-11.

Remington LaChance, L.E., and M.C. Robinson, 2012, Sequence stratigraphy of the Upper Cretaceous Niobrara Formation, A Bench, Wattenberg field, Denver Julesburg Basin, Colorado: AAPG Search and Discovery Article #20176, 35 p. <http://www.searchanddiscovery.com/documents/2012/20176lachance/ndx_lachance.pdf>

Ren, J., Q. Jheng, P. Guo, S. Peng, Z. Wang, and J. Du, 2019, Pore-scale lattice Boltzmann simulation of two-component shale gas flow: Journal of Natural Gas Science and Engineering, v. 61, p. 46-70.

Repetski, J.E., R.T. Ryder, D.J. Weary, A.G. Harris, and M.H. Trippi, 2008, Thermal maturity patterns (CAI and %Ro) in Upper Ordovidian and Devonian rocks of the Appalachian Basin: a major revision of USGS Map I-917-E using new subsurface collections: USGS Scientific Investigations Map 3006, 26 p.

Ressetar, R., 2012, Hydraulic fracturing and shale gas: Utah Geological Survey, Survey Notes, v. 44, no. 2, p. 8-9. <http://geology.utah.gov/surveynotes/archives/snt44-2.pdf>

Reynolds, M.A., 2020, A technical playbook for chemicals and additives used in the hydraulic fracturing of shales: Energy Fuels, v. 34, p. 15,106-15,125.

Reynolds, P.B.B.., and S. Nauduri, 2014, Horizontal drilling technology demonstrating ‘limitless potential’ in domestic, global operations, part 1: American Oil & Gas Reporter, v. 57, no. 8, p. 62-72.

Reyntjens, K., and A. Johnson, 2014, Ensuring sustainable shale operations through water management: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-93 to S-96.

Rezaee, R., 2015, Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., 399 p.

Rezaee, R., and M. Rothwell, 2015, Gas shale: Global significance, distribution, and challenges, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 1-19.

Rezaveisi, M., F. Javadpour, and K. Sepehrnoori, 2014, Modeling chromatographic separation of produced gas in shale wells: International Journal of Coal Geology, v. 121, p. 110-122.

Rhodes, A.L., and N.J. Horton, 2015, Establishing baseline water quality for household wells within the Marcellus Shale gas region, Susquehanna County, Pennsylvania, U.S.A.: Applied Geochemistry, v. 60, p. 14-28.

Richiano, S., A.N. Varela, L.E. Gómez-Peral, A. Cereceda, and D.G. Poiré, 2015, Composition of the Lower Cretaceous source rock from the Austral Basin (Río Mayer Formation, Patagonia, Argentina): Regional implication for unconventional reservoirs in the southern Andes: Marine and Petroleum Geology, v. 66, p. 764-790.

Rickman, R., M. Mullen, E. Petre, B. Grieser, and D. Kundert, 2009, Petrophysics key in stimulating shales: American Oil & Gas Reporter, v. 52, no. 3, p. 121-127.

Riestenberg, D., R. Ferguson, and V.A. Kuuskraa, 2007, Unconventional gas—3. New plays, prospects, resources continue to emerge: Oil & Gas Journal, v. 105.36, p. 48-54.

Řimnáčová, D., Z. Weishauptová, O. Přibl, I. Sýkorová, and M. René, 2020, Effect of shale properties on CH4 and CO2 sorption capacity in Czech Silurian shales: Journal of Natural Gas Science and Engineering, v. 80, 103377.

Rine, J.M., E. Smart, W. Dorsey, K. Hooghan, and M. Dixon, 2013, Comparison of porosity distribution within selected North American shale units by SEM examination of argon-ion-milled samples, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 137-152.

Ringhisen, J.A., M. Crowder, R.J. Crook, and J. Craig, 2008, Foamed cement key in Woodford Shale: American Oil & Gas Reporter, v. 51, no. 6, p. 110-115.

Rippen, D., R. Llittke, B. Bruns, and N. Mahlstedt, 2013, Organic geochemistry and petrography of Lower Cretaceous Wealden black shales of the Lower Saxony Basin: The transition from lacustrine oil shales to gas shales: Organic Geochemistry, v. 63, p. 18-36.

Rivard, B., N.B. Harris, J. Feng, and T. Dong, 2018, Inferring total organic carbon and major element geochemical and mineralogical characteristics of shale core from hyperspectral imagery: AAPG Bulletin, v. 102, p. 2101-2121. (Horn River; Woodford Shale Permian Basin)

Rivard, C., D. Lavoie, R. Lefebvre, S. Séjourné, C. Lamontagne, and M. Duchesne, 2014, An overview of Canadian shale gas production and environmental concerns: International Journal of Coal Geology, v. 126, p. 64-76.

Rivard, C., G. Bordeleau, D. Lavoie, R. Lefebvre, P. Ladevéze, M.J. Duchesne, S. Séjourné, H. Crow, N. Pinet, V. Brake, A. Bouchedda, E. Gloaguen, J.M.E. Ahad, X. Malet, J.C. Aznar, and M. Malo, 2019, Assessing potential impacts of shale gas development on shallow aquifers through upward fluid migration: A multi-disciplinary approach applied to the Utica Shale in eastern Canada: Marine and Petroleum Geology, v. 100, p. 466-483.

Robart, A., J. Coan, and R. Liou, 2014, China could rapidly develop its unconventional resources: Hart Energy Publishing, E&P, v. 87, no. 3, p. 102-104.

Robeck, M., and J. McNabb, 2011, Pennsylvania court raises questions about Marcellus shale gas ownership: Oil & Gas Journal, v. 109.18, p. 78-81.

Roberts, G.G., 2013, Shale-gas goes to college: Oil and Gas Investor, v. 33, no. 4, p. 75-78.

Robison, C.R., 1997, Hydrocarbon source rock variability within the Austin Chalk and Eagle Ford shale (Upper Cretaceous), east Texas, U.S.A.: International Journal of Coal Geology, v. 34, p. 287-305.

Robinson, J., 2012, Reducing environmental risk associated with Marcellus shale gas fracturing: Oil & Gas Journal, v. 110.4, p. 88-91.

Roden, R., and D. Sacrey, 2015, Seismic pattern recognition in shale resource plays: Hart Energy Publishing, E&P, v. 88, no. 1, p. 68, 70-71.

Rodgers, B., 2014, Declining costs enhance Duvernay Shale economics: Oil & Gas Journal, v. 112.9, p. 70-76.

Rodriguez, N., 2007, Geochemical characterization of gases from the Barnett Shale, Fort Worth Basin, Texas: Norman, University of Oklahoma, unpublished M.S. thesis, 123 p.

Rodriguez, N., and R.P. Philp, 2010, Geochemical characterization of gases from the Mississippian Barnett Shale, Fort Worth Basin, Texas: AAPG Bulletin, v. 94, p. 1641-1656.

Rodriguez, R.S., and D.J. Soeder, 2015, Evolving water management practices in shale oil & gas development: Journal of Unconventional Oil and Gas Resources, v. 10, p. 18-24.

Roesink, J., and J. Anderson, 2013, Wasatch-Green River resource play, Uinta Basin, Utah: AAPG Discovery Thinking Forum presentation. <http://link.videoplatform.limelight.com/media/?channelId=77ba249436c14a4c8e1395e47a062f09&width=480&height=321&playerForm=1283439134034fbfbfba2bc7da44d34f&deepLink=true>

Rogers, S., and B. Dershowitz, 2010, DFN modeling unlocks the potential of shale gas reservoirs: Hart Energy Publishing, E&P, v. 83, no. 2, p. 48-49.

Rogers, S., L. Crespo, D. Camper, S. Janwadkar, M. Thomas, S. Denney, T. Hommertzheim, and S. Privott, 2012, LWD images complex shale fracturing: American Oil & Gas Reporter, v. 55, no. 7, p. 131-137.

Romero-Sarmiento, M.-F., M. Ducros, B. Carpentier, F. Lorant, M.-C. Cacas, S. Pegaz-Fiornet, S. Wolf, S. Rohais, and I. Moretti, 2013, Quantitative evaluation of TOC, organic porosity and gas retention distribution in a gas shale play using petroleum system modeling: Application to the Mississippian Barnett Shale: Marine and Petroleum Geology, v. 45, p. 315-330.

Romero-Sarmiento, M.-F., J.-N. Rouzaud, S. Bernard, D. Deldicque, M. Thomas, and R. Littke, 2014, Evolution of Barnett Shale organic carbon structure and nanostructure with increasing maturation: Organic Geochemistry, v. 71, p. 7-16.

Romero-Sarmiento, M.-F., D. Pillot, G. Letort, V. Lamoureux-Var, V. Beaumont, A.-Y. Huc, and B. Garcia, 20156, New Rock-Eval method for characterization of unconventional shale resource systems: Oil & Gas Science and Technology, v. 71, 37.

Romero-Sarmiento, M.-F., t. Euzen, S. Rohais, C. Jiang, and R. Littke, 2016, Artificial thermal maturation of source rocks at different thermal maturity levels: Application to the Triassic Montney and Doig formations in the Western Canada Sedimentary Basin: Organic Geochemistry, v. 97, p. 148-162.

Rose, D.D., 2015, A diagenetic study of the Haynesville Shale, Bossier Parish and Red River Parish, Louisiana: Norman, University of Oklahoma, unpublished M.S. thesis, 80 p.

Ross, D., G. Chalmers, and R.M. Bustin, 2005, Reservoir characteristics of potential gas shales in the western Canadian sedimentary basin, in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 41.

Ross, D.J.K., and R.M. Bustin, 2007, Shale gas potential of the Lower Jurassic Gordondale member, northeastern British Columbia, Canada: Bulletin of Canadian Petroleum Geology, v. 55, p. 51-75.

Ross, D.J.K., and R.M. Bustin, 2007, Impact of mass balance calculations on adsorption capacities in microporous shale gas reservoirs: Fuel, v. 86, p. 2696-2706.

Ross, D.J.K., and R.M. Bustin, 2008, Characterizing the shale gas resource potential of Devonian-Mississippian strata in the western Canada sedimentary basin: Application of an integrated formation evaluation: AAPG Bulletin, v. 92, p. 87-125.

Ross, D.J.K., and R.M. Bustin, 2009, The importance of shale composition and pore structure upon gas storage potential of shale gas reservoirs: Marine and Petroleum Geology, v. 26, p. 916-927.

Roth, M., and A. Thompson, 2008, Microseismic increases formation data: American Oil & Gas Reporter, v. 51, no. 14, p. 117-121.

Roth, M., 2010, Unconventional reservoirs require unconventional approach to integrate, interpret data: American Oil & Gas Reporter, v. 53, no. 9, p. 98-105.

Roth, M., 2011, Analytics drive ‘home run’ performance: American Oil & Gas Reporter, v. 54, no. 11, p. 74-77.

Roth, M., 2013, Analytics help unravel complexities: American Oil & Gas Reporter, v. 56, no. 4, p. 169-175. (Eagle Ford)

Rowan, E.L., M.A. Engle, T.F. Kraemer, K.T. Schroeder, R.W. Hammack, and M.W. Doughten, 2015, Geochemical and isotopic evolution of water produced from Middle Devonian Marcellus Shale gas wells, Appalachian Basin, Pennsylvania: AAPG Bulletin, v. 99, p. 181-206.

Rowe, H.D., R.G. Loucks, S.C. Ruppel, and S.M. Rimmer, 2008, Mississippian Barnett Formation, Fort Worth Basin, Texas: Bulk geochemical inferences and Mo-TOC constraints on the severity of hydrographic restriction: Chemical Geology, v. 257, p. 16-25.

Rowe, H., N. Hughes and K. Robinson, 2012, The quantification and application of handheld energy-dispersive x-ray fluorescence (ED-XRF) in mudrock chemostratigraphy and geochemistry: Chemical Geology, v. 324-325, p. 122-131.

Ruble, T.E., K. (Bobby) Hooghan, W. Dorsey, W.R. Knowles, and C.D. Laughrey, 2019, Pore-scale imaging of solid bitumens: Insights for unconventional reservoir characterization, in W.K. Camp, K.L. Milliken, K. Taylor, N. Fishman, P.C. Hackley, and J.H.S. Macquaker, eds., Mudstone diagenesis: Research perspectives for shale hydrocarbon reservoirs, seals, and source rocks: AAPG Memoir 120, p. 189-208.

Rudnicki, M.D., 2016, Variation of organic matter density with thermal maturity: AAPG Bulletin, v. 100, p. 17-22.

Ruebsam, W., M. Stockhausen, and L. Schwark, 2016, Assessment of temporal source rock variability: An example from the Lower Jurassic Posidonia Shale: AAPG Search and Discovery Article 41974, 33 p.

Ruhle, W., 2015, Can refracturing add value in unconventional plays?: Hart Energy Publishing, E&P, v. 88, no. 12, p. 80-81.

Rupnow, C.C., 2010, Adding midstream facilities key to optimizing economics for Quicksilver in Barnett Shale: American Oil & Gas Reporter, v. 53, no. 3, p. 40-49.

Ruppel, S.C., and R.G. Loucks, 2008, Black mudrocks: Lessons and questions from the Mississippian Barnett Shale in the southern Midcontinent: The Sedimentary Record, v. 6, no. 2, p. 4-8.

Ruppert, L.F., R. Sakurovs, T.P. Blach, L. He, Y.B. Melnichenko, D.F.R. Mildner, and L. Alcantar-Lopez, 2013, A USANS/SANS study of the accessibility of pores in the Barnett Shale to methane and water: Energy & Fuels, v. 27, p. 772-779.

Ruppert, L.F., A.M. Jubb, T.F. Headen, T.G.A. Youngs, and B. Bandli, 2020, Impacts of mineralogical variation on CO2 behavior in small pores from producing intervals of the Marcellus Shale: Results from neutron scattering: Energy & Fuels, v. 34, p. 2765-2771.

Rupprecht, B.J., R.F. Sachsenhofer, H.-J. Gawlick, M.-E. Kallanxhi, and F. Kucher, 2017, Jurassic source rocks in the Vienna Basin (Austria): Assessment of conventional and unconventional petroleum potential: Marine and Petroleum Geology, v. 86, p. 1327-1356.

Rushmore, H., 2014, Operators share data to benchmark shale wells: Hart Energy Publishing, E&P, v. 87, no. 5, p. 60, 62.

Ryder, R.T., 1996, Fracture patterns and their origin in the Upper Devonian Antrim Shale gas reservoir of the Michigan Basin: a review: U.S. Geological Survey Open-File Report 96-23. <http://pubs.usgs.gov/of/1996/of96-023/>

Ryder, R.T., 2008, Assessment of Appalachian Basin oil and gas resources: Utica-Lower Paleozoic Total Petroleum System: U.S. Geological Survey Open-File Report 2008-1287, 29 p. <http://pubs.usgs.gov/of/2008/1287/>

Ryder, R.T., P.C. Hackley, H. Alimi, and M.H. Trippi, 2013, Evaluation of thermal maturity in the low maturity Devonian shales of the northern Appalachian Basin: AAPG Search and Discovery Article #10477, 67 p. <http://www.searchanddiscovery.com/pdfz/documents/2013/10477ryder/ndx_ryder.pdf.html>

Saberi, M.R., 2014, Rock physics modeling: Hart Energy Publishing, E&P, v. 87, no. 7, p. 78-79.

Sachsenhofer, R.F., and Y.V. Koltun, 2012, Black shales in Ukraine—A review: Marine and Petroleum Geology, v. 31, p. 125-136.

Saidian, M., U. Kuila, M. Prasad, S.R. Barraza, L.J. Godinez, and L. Alcantar-Lopez, 2016, A comparison of measurement techniques in shales (mudrocks): A case study of Haynesville, eastern European Silurian, Niobrara, and Monterey Formations, in T. Olson, ed., Imaging unconventional reservoir pore systems: AAPG Memoir 112, p. 89-144.

Sakhaee-Pour, A., and S.L. Bryant, 2015, Pore structure of shale: Fuel, v. 143, p. 467-475.

Salazar, J., D.A. McVay, and W.J. Lee, 2010, Development of an improved methodology to assess potential unconventional gas resources: Natural Resources Research, v. 19, p. 253-268.

Salazar, J.M., R.J.M. Bonnie, W.W. Clopine, and G.E. Michael, 2014, Mancos modeling uses basic log data: American Oil & Gas Reporter, v. 57, no. 13, p. 100-109.

Saldungaray, P., and T. Palisch, 2012, Hydraulic fracture optimization in unconventional reservoirs: Fracturing Technology, special supplement to World Oil (v. 233, no. 3), p. 7-13.

Salehi, I.A., 2010, Project targets the New Albany Shale: American Oil & Gas Reporter, v. 53, no. 5, p. 75-80.

Salvador, A., 2005, Natural gas in organic black shales, in Energy: a historical perspective and 21st century forecast: AAPG Studies in Geology 54, p. 73-74.

Sander, R., Z. Pan, L.D. Connell, M. Camilleri, M. Grigore, and Y. Yang, 2018, Controls on methane sorption capacity of Mesoproterozoic gas shales from the Beetaloo Sub-basin, Australia and global shales: International Journal of Coal Geology, v. 199, p. 65-90.

Sandrea, R., 2012, Evaluating production potential of mature US oil, gas shale plays: Oil & Gas Journal, v. 110.12, p. 58-67.

Sandrea, R., and G. Peels, 2014, Algorithm provides new EUR estimates for US shale plays: Oil & Gas Journal, v. 112.8, p. 56-58.

Sandrea, R., and I. Sandrea, 2014, New well-productivity data provide US shale potential insights: Oil & Gas Journal, v. 112.11, p. 66-76.

Sanei, H., H.I. Petersen, N.H. Schovsbo, C. Jiang, and M.E. Goodsite, 2014, Petrographic and geochemical composition of kerogen in the Furongian (U. Cambrian) Alum Shale, central Sweden: Reflections on the petroleum generation potential: International Journal of Coal Geology, v. 132, p. 158-169.

Sanei, H., J.M. Wood, O.H. Ardakani, C.R. Clarkson, and C. Jiang, 2015, Characterization of organic matter fractions in an unconventional tight gas siltstone reservoir: International Journal of Coal Geology, v. 150-151, p. 296-305.

Saneifer, M., A. Aranibar, and Z. Heidari, 2015, Rock classification in the Haynesville Shale based on petrophysical and elastic properties estimated from well logs: Interpretation, v. 3, no. 1, p. SA65-SA75.

Sang, G., S. Liu, D. Elsworth, Y. Yang, and L. Fan, 2020, Evaluation and modeling of water vapor sorption and transport in nanoporous shale: International Journal of Coal Geology, v. 228, 103553.

Sang, Q., Y. Li, Z. Yang, C. Zhu, J. Yao, and M. Dong, 2016, Experimental investigation of gas production processes in shale: International Journal of Coal Geology, v. 159, p. 30-47.

Sang, Q., Y. Li, C. Zhu, S. Zhang, and M. Dong, 2016, Experimental investigation of shale gas production with different pressure depletion schemes: Fuel, v. 186, p. 293-304.

Sano, J.L., K.T. Ratcliffe, and D.R. Spain, 2013, Chemostratigraphy of the Haynesville Shale, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 137-154.

Santeler, D., 2015, Boosting performance in unconventional shale plays: Shaletech Report, Special Supplement to World Oil, November, p. S-5 to S-7.

Saucier, H., 2014, Colorado crucial to convering dynamics; production up, but so are challenges: AAPG Explorer, v. 35, no. 6, p. 6, 8, 12. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10163/colorado-crucial-to-converging-dynamics>

Saucier, H., 2014, Unconventionals: Fuel for the sustainable switch?: AAPG Explorer, v. 35, no. 7, p. 10, 12. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10746/unconventionals-fuel-for-the-sustainable-switch>

Saucier, H., 2014, Combined approach used to tackle fracture monitoring: AAPG Explorer, v. 35, no. 12, p. 12, 14, 16. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/13689/combined-approach-used-to-tackle-fracture-monitoring>

Saucier, H., 2015, How the shale boom birthplace came to ban fracturing: AAPG Explorer, v. 36, no. 1, p. 6, 8, 20. <http://www.aapg.org/publications/news/explorer/details/articleid/14048/how-the-shale-boom-birthplace-came-to-ban-fracturing>

Saucier, H., 2015,’Shale adventure’ on Alaska’s North Slope; ‘Big deal’ in the Arctic: AAPG Explorer, v. 36, no. 2, p. 14-16. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/15835/%E2%80%98shale-adventure%E2%80%99-on-alaska%E2%80%99s-north-slope>

Saucier, H., 2015, Shale play outlook; How the U.S. became the World’s top producer: AAPG Explorer, v. 36, no. 6, p. 22, 24. <http://www.aapg.org/publications/news/explorer/details/articleid/20368/how-the-u-s-became-the-world%E2%80%99s-top-producer>

Saucier, H., 2015, Digging the rocks of Avalon; new ways of evaluating sweet spots take hold: AAPG Explorer, v. 36, no. 7, p. 10, 12, 14. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/21115/new-ways-of-evaluating-sweet-spots-take-hold>

Saucier, H., 2015, Texans clash, compromise over frac’ing: AAPG Explorer, v. 36, no. 7, p. 26, 28. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/21126/texans-clash-compromise-over-frac%E2%80%99ing>

Saucier, H., 2016, Argentina’s potential shale boom: AAPG Explorer, v. 37, no. 1, p. 16-17. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/24624/argentina%E2%80%99s-potential-shale-boom>

Sauerer, B., P.R. Craddock, M.D. AlJohani, K.L. Alsamadony, and W. Abdallah, 2017, Fast and accurate shale maturity determination by Raman spectroscopy measurement with minimal sample preparation: International Journal of Coal Geology, v. 173, p. 150-157.

Saur, M., and M. Wallace, 2011, Shale gas plays provide valuable seismic in a low-price environment: Hart Energy Publishing, E&P, v. 84, no. 1, p. 46-47.

Sawyer, W.K., M.D. Zuber, and J.R. Williamson, 1999, A simulation-based spreadsheet program for history matching and forecasting shale gas production: Society of Petroleum Engineers, SPE 57439, 8 p.

Schad, S.T., 2004, Hydrocarbon potential of the Caney Shale in southeastern Oklahoma: Tulsa, OK, University of Tulsa, unpublished M.S. thesis, 576 p.

Schaible, B., 2008, PetroQuest Energy finds success in transition to long-lived resource plays: American Oil & Gas Reporter, v. 51, no. 13, p. 50-58.

Schaible, B., 2010, Onslaught of regulations chasing the Marcellus: American Oil & Gas Reporter,v. 53, no. 11, p. 134-139.

Schamel, S., 2005, Shale-gas reservoirs of Utah: Survey of an unexploited potential energy resource: Utah Geological Survey Open-File Report 461, CD-ROM (114 p., appendix of core photos and databases)

Schamel, S., 2006, Shale gas resources of Utah: Assessment of previously undeveloped gas discoveries: Utah Geological Survey Open-File Report 499, CD-ROM, 85 p.

Schamel, S.C., 2008, Potential shale gas resources of Utah, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 119-161.

Schein, G.W., P.D. Carr, P.A. Canan, and R. Richey, 2006, Ultralightweight proppant helps optimize stimulation of Barnett Shale wells: American Oil & Gas Reporter, v. 49, no. 9, p. 42-44, 46, 48-49.

Schein, G.W., and S. Weiss, 2008, Simultaneous fracturing takes off: Hart Energy Publishing, E&P, v. 81, no. 3, p. 55-56.

Schenewerk, P., 2012, Comment: EOR can extend the promise of unconventional oil and gas: Oil & Gas Journal, v. 110.4, p. 48-52.

Schenk, C.J., R.R. Charpentier, T.R. Klett, T.J. Mercier, M.E. Tennyson, J.K. Pitman, and M.E. Brownfield, 2014, Assessment of potential unconventional lacustrine shale-oil and shale-gas resources, Phitsanulok Basin, Thailand, 2014: USGS Fact Sheet 2014-3033, 2 p.

Schenk, C.J., 2014, Assessment of potential shale-oil and shale-gas resources in Silurian shales of Jordan, 2014: USGS Fact Sheet 2014-3082, 2 p.

Schenk, C.J., M.E. Tennyson, T.J. Mercier, C.A. Woodall, T.M. Finn, M.E. Brownfield, P.A. Le, S.B. Gaswirth, K.R. Marra, H.M. Leathers-Miller, and C.J. Potter, 2017, Assessment of undiscovered continuous oil and gas resources in the Bohaiwan Basin Province, China, 2017: U.S. Geological Survey Fact Sheet 2017-3082, 2 p. <https://pubs.er.usgs.gov/publication/fs20173082>

Schenk, C.J., M.E. Tennyson, T.J. Mercier, C.A. Woodall, P.A. Le, T.R. Klett, T.M. Finn, H.M. Leathers-Miller, S.B. Gaswirth, and K.R. Marra, 2017, Assessment of undiscovered continuous oil and gas resources in the Hanoi Trough, Vietnam, 2017: U.S. Geological Survey Fact Sheet 2017-3086, 2 p. <https://pubs.er.usgs.gov/publication/fs20173086>

Schenk, C.J., T.J. Mercier, M.E. Tennyson, C.A. Woodall, T.M. Finn, J.K. Pitman, S.B. Gaswirth, K.R. Marra, P.A. Le, T.R. Klett, and H.M. Leathers-Miller, 2018, Assessment of continuous gas resources in the Phosphoria Formation of the Wyoming Thrust Belt Province, Wyoming, Idaho, and Utah, 2017: U.S. Geological Survey Fact Sheet 2018-3001, 2 p. <https://pubs.er.usgs.gov/publication/fs20183001>

Schenk, C.J., T.J. Mercier, T.M. Finn, M.E. Tennyson, P.A. Le, M.E. Brownfield, K.R. Marra, S.B. Gaswirth, H.M. Leathers-Miller, and R.M. Drake, II, 2018, Assessment of continuous gas resources of the North Caspian Basin Province, Kazakhstan and Russia, 2018: U.S. Geological Survey, Fact Sheet 2018-3051, 2 p. <https://pubs.er.usgs.gov/publication/fs20183051>

Schenk, C.J., T.J. Mercier, M.E. Tennyson, T.M. Finn, C.A. Woodall, P.A. Le, M.E. Brownfield, K.R. Marra, and H.M. Leathers-Miller, 2019, Assessment of continuous gas resources in the Montney and Doig Formations, Alberta Basin Province, Canada, 2018: U.S. Geological Survey, Fact Sheet 2018-3071, 2 p. <https://pubs.er.usgs.gov/publication/fs20183071>

Schettler, P.D., C.R. Parmely, and W.J. Lee, 1989, Gas storage and transport in Devonian Shales: SPE Formation Evaluation, v. 4, p. 371-376.

Schettler, P.D., and C.R. Parmely, 1990, The measurement of gas desorption isotherms for Devonian shale: Gas Shales Technology Review, v. 7, no. 1, p. 4-9.

Schettler, P.D., and C.R. Parmely, 1993, Physicochemical properties of methane storage and transport in Devonian shale: Des Plaines, Illinois, Gas Technology Institute, GRI-94/0114.1, 89 p.

Schieber, J. and R. Lazar, eds., 2004, Devonian black shales of the eastern U.S.: New insights into sedimentology and stratigraphy from the subsurface and outcrops in the Illinois and Appalachian Basins: Indiana Geological Survey Open-File Study 04-05, 90 p.

Schieber, J.., 2010, Common themes in the formation and preservation of porosity in shales and mudstones: Illustrated with examples across the Phanerozoic: Society of Petroleum Engineers Unconventional Gas Conference, Pittsburgh, Pennsylvania, February 23-25, 2010, SPE Paper 132370, 12 p.

Schieber, J., 2011, Shale microfabrics and pore development—An overview with emphasis on the importance of depositional processes, in D.A. Leckie and J.E. Barclay, eds., Gas shale of the Horn River Basin: Calgary, Canadian Society of Petroleum Geologists, p. 115-119.

Schieber, J., 2013, SEM observations on ion-milled samples of Devonian black shales from Indiana and New York: The petrographic context of multiple pore types, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 153-171.

Schilling, K.L., 2016, Managing water supplies key to operating strategies in unconventional plays: American Oil & Gas Reporter, v. 59, no. 8, p. 54-61.

Schlegel, J., O. Samji, D. Stringer, and M. Rockhill, 2013, Obstacles to foreign development of shale gas: Hart Energy Publishing, E&P, v. 86, no. 11, p. 50, 52. (international shales)

Schlegel, M.E., J.C. McIntosh, B.L. Bates, M.F. Kirk, and A.M. Martini, 2011, Comparison of fluid geochemistry and microbiology of multiple organic-rich reservoirs in the Illinois Basin, USA: Evidence for controls on methanogenesis and microbial transport: Geochimica et Cosmochimica Acta, v. 75, p. 1903-1919. (biogenic methane in New Albany Shale)

Schlegel, M.E., J.C. McIntosh, S.T. Petsch, W.H. Orem, E.J.P. Jones, and A.M. Martini, 2013, Extent and limits of biodegradation by *in situ* methanogenic consortia in shale and formation fluids: Applied Geochemistry, v. 28, p. 172-184. (New Albany Shale)

Schlosser, J., G.H. Grathoff, C. Ostertag-Henning, S. Kaufhold, and L.N. Warr, 2016, Mineralogical changes in organic-rich Posidonia Shale during natural and experimental maturation: International Journal of Coal Geology, v. 157, p. 74-83.

Schmid, K.W., 2012, The Marcellus Shale gas play—Geology and production and water management, oh my!: Pennsylvania Geology, v. 42, no. 2, p. 3-12. <http://www.dcnr.state.pa.us/topogeo/pub/pageolmag/pdfs/vol42no2.pdf>

Schmid, R., and F. Delbecq, 2012, Wide-azimuth seismic enables better shale play economics: Hart Energy Publishing, E&P, v. 85, no. 10, p. 76-79.

Schmoker, J.W., 1993, Use of formation-density logs to determine organic-carbon content in Devonian shales of the western Appalachian Basin and an additional example based on the Bakken Formation of the Williston Basin: U.S. Geological Survey Bulletin 1909, p. J1-J14.

Schmoker, J.W., J.C. Quinn, R.A. Crovelli, V.F. Nuccio, and T.C. Hester, 1996, Production characteristics and resources assessments of the Barnett Shale continuous (unconventional) gas accumulation, Fort Worth basin, Texas: U.S. Geological Survey Open-File Report OF-96-254, 20 p.

Schreiner, G.O., and L. Snyman-van der Walt, 2017, Modelling social-ecological risks of shale gas development in the Central Karoo: AAPG Search and Discovery Article No. 80608, 17 p.

Schrider, L.A., and R.L. Wise, 1980, Potential new sources of natural gas: Journal of Petroleum Technology, v. 32, no. 4, p. 703-716.

Schultz, A.J., 2010, New York’s Marcellus fracas: Oil and Gas Investor, v. 30, no. 3, p. 64-66.

Schulz, H.-M., B. Horsfield, and R.F. Sachsenhofer, 2010, Shale gas in Europe: a regional overview and current research activities, 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. 1079-1085.

Schulz, H.-M., S. Biermann, W. van Berk, M. Krűger, N. Straaten, A. Bechtel, R. Wirth, V. Lűders, N.H. Schovsbo, and S. Crabtree, 2015, From shale oil to biogenic shale gas: Retracing organic–inorganic interactions in the Alum Shale (Furongian–Lower Ordovician) in southern Sweden: AAPG Bulletin, v. 99, p. 927-956.

Schumaker, R.C., 1993, Structural parameters that affect Devonian shale gas production in West Virginia and eastern Kentucky, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. K1-K38.

Schweitzer, R., and H.I. Bilgesu, 2010, Developing U.S. shale plays: Marcellus: Economics of Marcellus shale well and fracture design completions: World Oil, v. 231, no. 3, p. D-87 to D-89.

Schwietering, J.F., 1979, Devonian shales of Ohio and their eastern and southern equivalents: Morgantown, WV, Report METC/CR-79/2.

Scialla, M., T. Covington, and C. Pikul, 2006, Gas resource-play economics: Oil and Gas Investor, v. 26, no. 12, p. 9.

Scott, A.R., 2009, Developing exploration strategies for coal-bed methane and shale gas reservoirs, in T. Carr, T. D’Agostino, W. Ambrose, J. Pashin, and N.C. Rosen, eds., Unconventional energy resources: making the unconventional conventional: 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, CD-ROM, p. 303-305.

Scott, L., and T. Royer, 2012, Integration enhances shale production: Hart Energy Publishing, E&P, v. 85, no. 10, p. 68-70. (seismic)

Searcy, T.Y., 2005, Microearthquake investigations to reveal anisotropic behavior of seismic characteristics in the Barnett Shale, Newark East field, Wise County, Texas: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 156 p.

Selle, MJ, 2014, Rockies tight sands and shales: technology: Challenges in exploration, drilling and completions, in Rockies tight sands and shales playbook: Houston, Hart Energy Publishing, p. 52-64.

Selle, MJ, 2015, New solutions for effective production are flourishing, in North American unconventional yearbook: Houston, Hart Energy Publishing, p. 92-111.

Selley, R.C., 1987, British shale gas potential scrutinized: Oil & Gas Journal, p. 62-64.

Selley, R.C., 2005, UK shale-gas resources, in A.G. Doré and B.A. Vining, eds., Petroleum geology: north-west Europe and global perspectives: London, Geological Society, Proceedings of the 6th Petroleum Geology Conference, p. 707-714.

Selley, R.C., 2012, UK shale gas: The story so far: Marine and Petroleum Geology, v. 31, p. 100-109.

Sexton, T., and K. Powell, 2007, An overview of the Floyd Shale and Chattanooga Shale gas play in Alabama: Alabama State Oil and Gas Board, 5 p. <http://www.gsa.state.al.us/documents/misc_ogb/Floyd%20Shale.pdf>

Sexton, T., and K. Powell, 2007, An overview of the Conasauga Shale gas play in Alabama: Alabama State Oil and Gas Board, 3 p. <http://www.ogb.state.al.us/documents/misc_ogb/Conasauga%202007_C%20Nov.pdf>

Shabani, M., S.A. Moallemi, B.M. Krooss, A. Amann-Hildenbrand, Z. Zamani-Pozveh, H. Ghalavand, and R. Littke, 2018, Methane sorption and storage characteristics of organic-rich carbonaceous rocks, Lurestan province, southwest Iran: : International Journal of Coal Geology, v. 186, p. 51-64.

Shabani, M., B.M. Krooss, M. Hallenberger, A. Amann-Hildenbrand, R. Fink, and R. Littke, 2020, Petrophysical characterization of low-permeable carbonaceous rocks: Comparison of different experimental methods: Marine and Petroleum Geology, v. 122, 104658.

Shang, F., Y. Zhu, Q. Hu, Y. Wang, Y. Li, W. Li, R. Liu, and H. Gao, 2020, Factors controlling organic-matter accumulation in the Upper Ordovician-Lower Silurian organic-rich shale on the northeast margin of the Upper Yangtze platform: Evidence from petrographic and geochemical proxies: Marine and Petroleum Geology, v. 121, 104597.

Shangbin, C., Z. Yanming, C. Si, H. Yufu, F. Changqing, and F. Junhua, 2017, Hydrocarbon generation and shale gas accumulation in the Longmaxi Formation, southern Sichuan Basin, China: Marine and Petroleum Geology, v. 86, p. 248-258.

Shao, D., T. Zhang, L.T. Ko, H. Luo, and D. Zhang, 2019, Empirical plot of gas generation from oil-prone marine shales at different maturity stages and its application to assess gas preservation in organic-rich shale system: Marine and Petroleum Geology, v. 102, p. 258-270.

Shao, D., T. Zhang, L.T. Ko, Y. Li, J. Yan, L. Zhang, H. Luo, and B. Qiao, 2020, Experimental investigation of oil generation, retention, and expulsion within Type II kerogen-dominated marine shales: Insights from gold-tube nonhydrous pyrolysis of Barnett and Woodford Shale using miniature core plugs: International Journal of Coal Geology, v. 217, 103337.

Shao, X., X. Pang, Q. Li, P. Wang, D. Chen, W. Shen, and Z. Zhao, 2017, Pore structure and fractal characteristics of organic-rich shales: A case study of the lower Silurian Longmaxi shales in the Sichuan Basin, SW China: Marine and Petroleum Geology, v. 80, p. 192-202.

Shao, X., X. Pang, H. Li, T. Hu, T. Xu, Y. Xu, and B. Li, 2018, Pore network characteristics of lacustrine shales in the Dongpu Depression, Bohai Bay Basin, China, with implications for oil retention: Marine and Petroleum Geology, v. 96, p. 457-473.

Sharma, R.K., and S. Chopra, 2012, An effective way to find formation brittleness: AAPG Explorer, v. 33, no. 9, p. 48-49. <http://www.aapg.org/explorer/2012/09sep/geocorner0912.cfm>

Sharma, R.K., and S. Chopra, 2014, Seismic attributes characterize shales: American Oil & Gas Reporter, v. 57, no. 10, p. 125-131.

Sharma, S., L. Bowman, K. Schroeder, and R. Hammack, 2015, Assessing changes in gas migration pathways at a hydraulic fracturing site: Example from Greene County, Pennsylvania, USA: Applied Geochemistry, v. 60, p. 51-58.

Sheehan, C., 2013, Better all the time: Oil and Gas Investor, v. 33, no. 9, p. 13. (Marcellus)

Sheehan, C., 2014, On the money, the Marcellus maze: Oil and Gas Investor, v. 34, no. 3, p. 15.

Sheehan, C., 2014, Euroshales await a breakthrough: Oil and Gas Investor, v 34, no. 8, p. 68-73. (Europe)

Sheehan, C., 2015, Why shale must regains its mojo: Oil and Gas Investor, v. 35, no. 6, p. 11.

Shelby, P., 2006, The Fayetteville Shale play: a project overview (abstract): Rocky Mountain Natural Gas 2006, Program and Abstracts, p. 141-142.

Shelley, R., A. Nejad, N. Guliyev, M. Raleigh, and D. Matz, 2015, Using data-driven modeling to understand multi-fractured, horizontal Marcellus completions: Shaletech Report, supplement to World Oil, v. 236, no. 5, p. S-4 to S-11.

Shelley, R.F., 2016, Engineering effective and efficient completions: World Oil, v. 237, no. 3, p. 75-77. (Eagle Ford)

Shen, W., L. Zheng, C.M. Oldenburg, A. Cihan, J. Wan, and T.K. Tokunaga, 2018, Methane diffusion and adsorption in shale rocks: A numerical study using the Dusty Gas Model in TOUGH2/EOS7C-ECBM: Transport in Porous Media.

Sheng, C., Z. Wenzhi, G. Xinmin, Z. Qingcai, Y. Qing, and G. Shaohua, 2019, Predicting gas content in high-maturity marine shales using artificial intelligence based seismic multiple-attributes analysis: A case study from the lower Silurian Longmaxi Formation, Sichuan Basin, China: Marine and Petroleum Geology, v. 101, p. 180-194.

Sheng, G., Y. Su, H. Zhao, and J. Liu, 2020, A unified apparent porosity/permeability model of organic porous media: Coupling complex pore structure and multi-migration mechanism: Advances in Geo-Energy Research, v. 4, no. 2, p. 115-125.

Shi, J.-Q., and S. Durucan, 2016, Near-exponential relationship between effective stress and permeability of porous rocks revealed in Gangi’s phenomenological models and application to gas shales: International Journal of Coal Geology, v. 154-155, p. 111-122.

Shi, M., B. Yu, Z. Xue, J. Wu, and Y. Yuan, 2015, Pore characteristics of organic-rich shales with high thermal maturity: A case study of the Longmaxi gas shale reservoirs from well Yuye-1 in southeastern Chongqing, China: Journal of Natural Gas Science and Engineering, v. 26, p. 948-959.

Shi, M., B. Yu, and J. Zhang, 2017, Pore characteristics of the organic-rich marine shales with high thermal maturity: A case study of the Lower Silurian Longmaxi gas shale reservoirs in southern China: AAPG Search and Discovery Article #51387, 5 p.

Shi, M., B. Yu, J. Zhang, H. Huang, Y. Yuan, and B. Li, 2018, Microstructural characterization of pores in marine shales of the Lower Silurian Longmaxi Formation, southeastern Sichuan Basin, China: Marine and Petroleum Geology, v. 94, p. 166-178.

Shi, S., Y. Wang, H. Guo, C. Chen, and R. Deng, 2021, Variations in pore structure of marine shale from the same horizon of the Longmaxi Formation with changing position in a small-scale anticline: Implications for the influence of structural deformation: Marine and Petroleum Geology, v. 124, 104837.

Shi, W., X. Wang, Z. Wang, Y. Shi, A. Feng, and N. Chen, 2020, A study on the relationship between graptolites and shale gas enrichment in the Wufeng-Longmaxi Formations of the Middle-Upper Yangtze region in China: Arabian Journal of Geosciences, v. 13: 483.

Shi, Y., M.R. Yassin, L. Yuan, and H. Dehghanpour, 2019, Modelling imbibition data for determining size distribution of organic and inorganic pores in unconventional rocks: International Journal of Coal Geology, v. 201, p. 26-43.

Shirley, K., 2001, Tax break rekindled interest, shale gas exciting again: AAPG Explorer, v. 22, no. 3, p. 24-25, 33. <http://www.aapg.org/explorer/2001/03mar/gas_shales.cfm>

Shirley, K., 2001, 1,000 recompletion candidates, Lewis not overlooked anymore: AAPG Explorer, v. 22, no. 3, p. 26-27. <http://www.aapg.org/explorer/2001/03mar/gas_shaleslewis.cfm>

Shirley, K., 2002, Infrastructure key to gas play, Barnett Shale living up to potential: AAPG Explorer, v. 23, no. 7 <http://www.aapg.org/explorer/2002/07jul/barnett_shale.cfm>

Shoemaker, M., N. Zakhour, and J. Peacock, 2015, Stacked Wolfcamp laterals improve pad drilling and completion economics: American Oil & Gas Reporter, v. 58, no. 12, p. 50-63.

Shook, M., J. Jameson, and D. Scott, 2017, A shale completions JIP: Hart Energy Publishing, E&P, v. 90, no. 4, p. 48-49. (joint industry project)

Shovkun, I., and D.N. Espinoza, 2017, Coupled fluid flow-geomechanics simulation in stress-sensitive coal and shale reservoirs: Impact of desorption-induced stresses, shear failure, and fines migration: Fuel, v. 195, p. 260-272.

Shu, Y., Y. Lu, L. Chen, C. Wang, and B. Zhang, 2020, Factors influencing shale gas accumulation in the lower Silurian Longmaxi Formation between the north and south Jiaoshiba area, southeast Sichuan Basin, China: Marine and Petroleum Geology, v. 111, p. 905-917.

Shumaker, R.C., 1993, Structural parameters that affect Devonian shale gas production in West Virginia and eastern Kentucky, in J.B. Roen and R.C. Kepferle, eds., Petroleum geology of the Devonian and Mississippian black shale of eastern North America: U.S. Geological Survey Bulletin 1909, p. K1-K38.

Shurr, G.W., and J.L. Ridgley, 2002, Unconventional shallow biogenic gas systems: AAPG Bulletin, v. 86, p. 1939-1969.

Shurr, G.W., 2008, Shallow biogenic gas in Cretaceous shales on the eastern margin of the Williston Basin, in D.G. Hill, P.G. Lillis, and J.B. Curtis, eds., Gas shale in the Rocky Mountains and beyond: Rocky Mountain Association of Geologists, 2008 Guidebook, CD, p. 176-198.

Sigal, R.F., and E. Odusina, 2011, Laboratory NMR measurements on methane saturated Barnett Shale samples: Petrophysics, v. 52, p. 32-49.

Sigal, R.F., D. Deepak, and F. Civan, 2015, A review of the critical issues surrounding the simulation of transport and storage in shale reservoirs, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 267-282.

Silva, P.L., and R.M. Bustin, 2017, Mineralogical and petrophysical characterization of the reservoir facies of Doig Formation in British Columbia, Triassic of western Canada sedimentary basin: AAPG Search and Discovery Article #10948, 4 p.

Simmons, J., 2010, Haynesville adjusting to new realities: American Oil & Gas Reporter, v. 53, no. 13, p. 55-59.

Simmons, S., 2011, Transforming south Texas’ midstream: Houston, Hart Energy Publishing, Eagle Ford Shale 2011 Playbook, p. 76-90.

Simmons, S., 2011, Infrastructure needs follow fast-paced Marcellus activity: Houston, Hart Energy Publishing, Marcellus Shale Playbook, p. 76-80.

Simmons, S., 2012, A Marcellus and Utica update, in Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, p. 78-85.

Simmons, S., 2012, Utica update: Midstream Business, A supplement to Oil and Gas Investor, v. 2, no. 8, p.30-33.

Simon, C.J., 2010, Hot on Eagle Ford: Oil and Gas Investor, v. 30, no. 9, p. 17.

Simon, C., and H. Williams, 2013, Which way will the Utica go?: Oil and Gas Investor, v. 33, no. 7, p. 15.

Simonton, S., E. Felczak, and A. Torre, 2012, Improving horizontal drilling efficiency: A case study from the Woodford Shale: World Oil, v. 233, no. 4, p. 41-49.

Sinclair, S., D. Nicklin, and G. Treadgold, 2011, Advanced 3-D technologies key to exploring, drilling in Eagle Ford Shale play: American Oil & Gas Reporter, v. 54, no. 1, p. 111-119.

Singh, H., and F. Javadpour, 2015, Langmuir slip-Langmuir sorption permeability model of shale: Fuel, v. 164, p. 28-37.

Singh, M.K., 2007, Correlation and biostratigraphy of surface and shallow subsurface sections of the Barnett Shale, Llano Uplift, south-central Texas: Stillwater, Oklahoma, Oklahoma State University, unpublished M.S. thesis.

Singh, P., 2008, Lithofacies and sequence stratigraphic framework of the Barnett Shale, northeast Texas: Norman, OK, University of Oklahoma, unpublished PhD dissertation, 181 p.

Singh, P., R.M. Slatt, and W. Coffey, 2008, Barnett Shale—unfolded: Sedimentology, sequence stratigraphy, and regional mapping: Gulf Coast Association of Geological Societies Transactions, v. 58, p. 777-795.

Singh, P., R. Slatt, G. Borges, R. Perez, R. Portas, K. Marfurt, M. Ammerman, and W. Coffey, 2009, Reservoir characterization of unconventional gas shale reservoirs: example from the Barnett Shale, Texas, U.S.A.: Oklahoma City Geological Society, Shale Shaker, v. 60, p. 15-31.

Singleton, S., 2015, Reservoir characterization for unconventional plays: Hart Energy Publishing, E&P, v. 88, no. 1, p. 64, 66-67.

Sisk, C., D. Diaz, J. Walls, A. Grader, and M. Suhrer, 2010, 3-D visualization and classification of pore structure and pore filling in gas shales: Society of Petroleum Engineers Annual Technical Conference and Exhibition, Florence, Italy, September 19-22, 2010, SPE Paper 134582, 4 p.

Sjurseth, L.C., 2011, Growing Hawkville field: Oil and Gas Investor, v. 31, no. 1, p. 73-74. (Eagle Ford Shale)

Skalak, K.J., M.A. Engle, E.L. Rowan, G.D. Jolly, K.M. Conko, A.J. Benthem, and T.F. Kraemer, 2014, Surface disposal of produced waters in western and southwestern Pennsylvanian: Potential for accumulation of alkali-earth elements in sediments: International Journal of Coal Geology, v. 126, p. 162-170.

Slaton, M., 2014, Barnett Shale production peaking for now, but potential remains strong: World Oil, v. 235, no. 4, p. 118-126.

Slatt, R.M., P. Singh, R.P. Philp, K.J. Marfurt, Y. Abousleiman, N.E. O’Brien, and E.V. Eslinger, 2009, Workflow for stratigraphic characterization of unconventional gas shales: Gulf Coast Association of Geological Sciences Transactions, v. 59, p. 699-710.

Slatt, R.M., and Y. Abousleiman, 2011, Merging sequence stratigraphy and geomechanics for unconventional gas shales: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 274-282.

Slatt, R.M., and N.R. O’Brien, 2011, Pore types in the Barnett and Woodford gas shales: Contribution to understanding gas storage and migration pathways in fine-grained rocks: AAPG Bulletin, v. 95, p. 2017-2030.

Slatt, R.M., 2011, Important geological properties of unconventional resource shales: Oklahoma City Geological Society, Shale Shaker, v. 62, p. 224-243.

Slatt, R.M., 2011, Important geological properties of unconventional resource shales: Central European Journal of Geosciences, v. 3, p. 435-448.

Slatt, R.M., P.R. Philp, Y. Abousleiman, P. Singh, R. Perez, R. Portas, K.J. Marfurt, S. Madrid-Arroyo, N. O’Brien, E.V. Eslinger, and E.T. Baruch, 2012, Pore-to-regional-scale integrated characterization workflow for unconventional gas shales, in J. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 127-150.

Slatt, R.M., N. Buckner, Y. Abousleiman, R. Sierra, P. Philp, A. Micelli-Romero, R. Portas, N. O’Brien, M. Tran, R. Davis, and T. Wawrzyniec, 2012, Outcrop/behind outcrop (quarry), multiscale characterization of the Woodford gas shale, Oklahoma, in J. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 382-402.

Slatt, R.M., and N.D. Rodriguez, 2012, Comparative sequence stratigraphy and organic geochemistry of gas shales: commonality or coincidence?: Journal of Natural Gas Engineering and Science, v. 8, p. 68-84.

Slatt, R.M., 2013, Sequence stratigraphy of the Woodford Shale and application to drilling and production: AAPG Search and Discovery Article #50792, 20 p. <http://www.searchanddiscovery.com/documents/2013/50792slatt/ndx_slatt.pdf>

Slatt, R.M., and N.R. O’Brien, 2013, Microfabrics related to porosity development, sedimentary and diagenetic processes, and composition of unconventional resource shale reservoirs as determined by conventional scanning electron microscopy, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 37-44.

Slatt, R.M., 2013, Stratigraphic reservoir characterization for petroleum geologists, geophysicists, and engineers (second edition): Amsterdam, Elsevier, Developments in petroleum science, v. 61, 688 p.

Slatt, R.M., 2013, Unconventional resource shales, in Stratigraphic reservoir characterization for petroleum geologists, geophysicists, and engineers (second edition): Amsterdam, Elsevier, Developments in petroleum science, v. 61, p. 553-620.

Slatt, R.M., N. O’Brien, C. Molinares-Blanco, A. Serna-Bernal, E. Torres, and P. Philp, 2013, Pores, spores, pollen and pellets: small, but significant constituents of resource shales: Unconventional Resources Technology Conference URTeC Control ID Number 1573336, 15 p.

Slatt, R.M., C. Molinares-Blanco, J.D. Amorocho, C.L. Cabarcas, and E. Torres-Parada, 2014, Sequence stratigraphy, geomechanics, microseismicity, and geochemistry relationships in unconventional resource shales: Unconventional Resources Technology Conference, URTeC 1934195, 16 p.

Slatt, R.M., B. McCullough, C. Molinares, E. Baruch, F. Cardona, and B. Turner, 2015, Paleotopographic and depositional environment control on “sweet spot” locations in unconventional resource shales: Woodford and Barnett shale examples: AAPG Search and Discovery Article #10713, 16 p. <http://www.searchanddiscovery.com/documents/2015/10713slatt/ndx_slatt.pdf>

Slatt, R.M., B. McCullough, C. Molinares, E. Baruch, and B. Turner, 2015, Paleotopographic and depositional environment controls on “sweet spot” locations in unconventional resource shales: Woodford and Barnett shale examples: Part 2: AAPG Search and Discovery Article #80467, 22 p. <http://www.searchanddiscovery.com/pdfz/documents/2015/80467slatt/ndx_slatt.pdf.html>

Slatt, R.M., 2015, Sequence stratigraphy of unconventional resource shales, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 71-88.

Slatt, R.M., and students of Stack-Merge-SCOOP industry consortium, 2018, Conventional analysis of unconventional resource shales: Oklahoma City Geological Society, Shale Shaker, v. 69, p. 292-328.

Slatt, R.M., 2020, Characterization of unconventional resource shales (mudstones): The necessity of multiscale scientific integration, in T. Dewers, J. Heath, and M. Sánchez, Shale: Subsurface science and engineering: American Geophysical Union, Geophysical Monograph 245, p. 163-195.

Sledzik, J., 2010, Technology reveals ‘inevitable surprises’ in shale plays: Hart Energy Publishing, E&P, v. 83, no. 11, p. 61-62.

Slocum, M.T., 2015, URTeC: Unconventional innovation begins with data, investment: Oil & Gas Journal, v. 113.7c, p. 22.

Słowakiewicz, M., M.E. Tucker, C.H. Vane, R. Harding, A. Collins, and R.D. Pancost, 2015, Shale-gas potential of the Mid-Carboniferous Bowland-Hodder Unit in the Cleveland Basin (Yorkshire), central Britain: Journal of Petroleum Geology, v. 38, p. 59-76.

Smalley, E., 2011, CT advances key for horizontal wells: American Oil & Gas Reporter, v. 54, no. 3, p. 103-107. (coiled tubing)

Smart, K.J., G.I. Ofoegbu, A.P. Morris, R.N. McGinnis, and D.A. Ferrill, 2014, Geomechanical modeling of hydraulic fracturing: Why mechanical stratigraphy, stress state, and pre-existing structure matter: AAPG Bulletin, v. 98, p. 2237-2261.

Smistad, E., 2013, Environmental impacts in gas production monitored by NETL: World Oil, v. 234, no. 9, p. 119-122.

Smith, N., P. Turner, and G. Williams, 2010, UK data and analysis for shale gas prospectivity, 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. 1087-1098.

Smith Llinás, E., 2014, Finding unconventional success in Colombia: AAPG Explorer, v. 35, no. 7, p. 34, 48. <http://www.aapg.org/publications/news/explorer/emphasis/articleid/10759/finding-unconventional-success-in-colombia>

Smoller, S.L., 2008, Uinta Basin growing pains challenge infrastructure: Oil and Gas Investor, An Investor’s Guide to the Rockies, p. 33-36.

Smoller, S., 2009, The mighty Marcellus: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 12-16.

Smosna, R., and K.R. Burner, 2012, Resource assessment of the Marcellus Shale, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 201-204.

Snedden, J.W., 2014, Estimating effective shale area distributions from subsurface data: Marine and Petroleum Geology, v. 49, p. 35-44.

Snow, N., 2007, Shale plays send PGC’s US gas resources estimates higher: Oil & Gas Journal, v. 105.36, p. 22-23.

Snow, N., 2008, Producers, regulators address Marcellus shale gas challenges: Oil & Gas Journal, v. 106.42, p. 24-28.

Snow, N., 2009, States regulate hydraulic fracturing well, officials testify: Oil & Gas Journal, v. 107.25, p. 24-26.

Snow, N., 2009, CSIS: unconventional resources altering global gas outlook: Oil & Gas Journal, v. 107.42, p. 19-20.

Snow, N., 2010, Marcellus shale’s sweet spot: Oil & Gas Journal, v. 108.10, p. 30.

Snow, N., 2010, Experts see shale gas affecting overseas supplies: Oil & Gas Journal, v. 108.14, p. 20-23.

Snow, N., 2010, Regulators voice concerns at Marcellus Shale conference: Oil & Gas Journal, v. 108.39, p. 18-19.

Snow, N., 2010, Pennsylvania Marcellus rules protect environment, official says: Oil & Gas Journal, v. 108.39, p. 19-21.

Snow, N., 2010, Analysts to FERC: US gas market in good shape: Oil & Gas Journal, v. 108.41, p. 38-39.

Snow, N., 2011, Growing shale role inevitable amid other options in US gas future: Oil & Gas Journal, v. 109.6, p. 30, 32-34.

Snow, N., 2011, Strong state programs key to safe shale gas activity, senators told: Oil & Gas Journal, v. 109.11b, p. 18-19.

Snow, N., 2011, Looking at shale gas: Oil & Gas Journal, v. 109.15d, p. 21. (reserves reporting)

Snow, N., 2011, EPA to develop unconventional gas production wastewater rules: Oil & Gas Journal, v. 109.17d, p. 26, 28.

Snow, N., 2013, Shale gas renaissance makes governments examine regulatory roles: Oil & Gas Journal, v. 111.8c, p. 20-21.

Snow, N., 2014, Study finds bad well construction, not fracing, fouled water wells: Oil & Gas Journal, v. 112.9c, p. 30.

Snyder, S., and T. Holcomb, 2014, Legislation could keep good times flowing in Texas shales: Hart Energy Publishing, E&P, v. 87, no. 6, p. 90, 93. (water)

Soeder, D.J., 1988, Porosity and permeability of eastern Devonian gas shale: SPE Formation Evaluation, v. 13, no. 2, p. 116-124.

Soeder, D.J., and W.M. Kappel, 2009, Water resources and natural gas production from the Marcellus Shale: U.S. Geological Survey, Fact Sheet 2009-3032, 6 p. <http://md.water.usgs.gov/publications/fs-2009-3032/fs-2009-3032.pdf>

Soeder, D.J., 2012, The successful development of shale gas resources in the United States: AAPG Search and Discovery Article #41058, 26 p. <http://www.searchanddiscovery.com/documents/2012/41058soeder/ndx_soeder.pdf>

Soeder, D.J., 2012, Shale gas development in the United States, in H.A. Al-Megren, ed., Advances in natural gas technology: Rijeka, Croatia, InTech, p. 3-28. <http://www.intechopen.com/books/advances-in-natural-gas-technology/shale-gas-development-in-the-united-states> (history of gas shales; Eastern Gas Shales Project)

Soeder, D.J., S. Sharma, N. Pekney, L. Hopkinson, R. Dilmore, B. Kutchko, B. Stewart, K. Carter, A. Hakala, and R. Capo, 2014, An approach for assessing engineering risk from shale gas wells in the United States: International Journal of Coal Geology, v. 126, p. 4-19.

Soeder, D.J., C.B. Enomoto, and J.A. Chermak, 2014, The Devonian Marcellus Shale and Millboro Shale, in C.M.Bailey, and L.V. Coiner, eds., Elevating geoscience in the southeastern United States: New ideas about old terranes—field guides for the GSA Southeastern Section Meeting, Blacksburg, Virginia, 2014: Geological Society of America Field Guide 35, p. 129–160.

Soeder, D.J., 2017, Unconventional: The development of natural gas from the Marcellus Shale: GSA Special Paper 527, 143 p.

Soeder, D.J., 2018, Development of stranded gas in the Niobrara Shale: AAPG Search and Discovery Article #80629, 2 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/80629soeder/ndx_soeder.pdf.html>

Soeder, D.J., 2018, When oil and water mix: Understanding the environmental impacts of shale development: GSA Today, v. 28, no. 9, p. 4-10. <http://www.geosociety.org/gsatoday/science/G361A/GSATG361A.pdf>

Soeder, D.J., 2018, The successful development of gas and oil resources from shales in North America: Journal of Petroleum Science and Engineering, v. 163, p. 399-420.

Soliman, M., and D. Prather, 2007, Factors key for fracturing horizontals: American Oil & Gas Reporter, v. 50, no. 9, p. 63-69.

Sondergeld, C.H., and C.S. Rai, 2009, Data integration aids in shale plays: Hart Energy Publishing, E&P, v. 82, no. 9, p. 36-37.

Sondergeld, C.H., and C.S. Rai, 2010, Nanoscale imaging visualizes shale gas plays: Hart Energy Publishing, E&P, v. 83, no. 9, p. 51, 53.

Sondergeld, C.H., K.E. Newsham, J.T. Comiski, M.C. Rice, and C.S. Rai, 2010, Petrophysical considerations in evaluating and producing shale gas: SPE Paper 131768, 34 p

Sondergeld, C.H., R.J. Ambrose, C.S. Rai, and J. Moncrieff, 2010, Micro-structural studies of gas shales: Society of Petroleum Engineers, SPE Paper 131771, 17 p.

Sondergeld, C.H., and C.S. Rai, 2011, Elastic anisotropy of shales: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 324-331.

Sondergeld, C.H., C.S. Rai, and M.E. Curtis, 2013, Microstructure and anisotropy in gas shales, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 179-187.

Song, D., J. Tuo, M. Zhang, C. Wu, L. Su, J. Li, Y. Zhang, and D. Zhang, 2019, Hydrocarbon generation potential and evolution of pore characteristics of Mesoproterozoic shales in north China: Results from semi-closed pyrolysis experiments: Journal of Natural Gas Science and Engineering, v. 62, p. 171-183.

Song, D., J. Tuo, C. Wu, M. Zhang, and L. Su, 2020, Comparison of pore evolution for a Mesoproterozoic marine shale and a Triassic terrestrial mudstone during artificial maturation experiments: Journal of Natural Gas Science and Engineering, v. 75, 103153.

Song, J., R. Littke, and P. Weniger, 2017, Organic geochemistry of the Lower Toarcian Posidonia Shale in NW Europe: Organic Geochemistry, v. 106, p. 76-92.

Song, L., and T. Carr, 2017, Characterization of the pore system and its storage capacity in Devonian black shale of Appalachian Basin: AAPG Search and Discovery Article #42085, 2 p.

Song, L., K. Martin, T.R. Carr, and P.K. Ghahfarokhi, 2019, Porosity and storage capacity of Middle Devonian shale: A function of thermal maturity, total organic carbon, and clay content: Fuel, v. 241, p. 1036-1044.

Song, L., T. Warner, and T. Carr, 2019, An efficient, consistent, and trackable method to quantify organic matter-hosted porosity from ion-milled scanning electron microscope images of mudrock gas reservoirs: AAPG Bulletin, v. 103, p. 1473-1492.

Song, L., and T.R. Carr, 2020, The pore structural evolution of the Marcellus and Mahantango shales, Appalachian Basin: Marine and Petroleum Geology, v. 114, 104226.

Song, W., J. Yao, Y. Li, H. Sun, L. Zhang, Y. Yang, J. Zhao, and H. Sui, 2016, Apparent gas permeability in an organic-rich shale reservoir: Fuel, v. 181, p. 973-984.

Song, W., J. Yao, J. Ma, G.D. Couples, Y. Li, and H. Sun, 2018, Pore-scale numerical investigation into the impacts of the spatial and pore-size distributions of organic matter on shale gas flow and their implications on multiscale characterization: Fuel, v. 216, p. 707-721.

Song, W., D. Wang, J. Yao, Y. Li, H. Sun, Y. Yang, and L. Zhang, 2019, Multiscale image-based fractal characteristics of shale pore structure with implication to accurate prediction of gas permeability: Fuel, v. 241, p. 522-532.

Song, X., X. Lü, Y. Shen, S. Guo, and Y. Guan, 2018, A modified supercritical Dubinin–Radushkevich model for the accurate estimation of high pressure methane adsorption on shales: International Journal of Coal Geology, v. 193, p. 1-15.

Song, Z., L. Liu, M. Wei, B. Bai, J. Hou, Z. Li, and Y. Hu, 2015, Effect of polymer on disproportionate permeability reduction to gas and water for fractured shales: Fuel, v. 143, p. 28-37.

Spaid, J., J. Dahl, S. Gutierrez Carrilero, E. Shearer, G. Carpenter, and D. Buller, 2015, Advanced quadrapole sonic and borehole imaging optimize shale well placement: American Oil & Gas Reporter, v. 58, no. 11, p. 78-85.

Spain, D.R., and R. McLin, 2013, SEM characterization of shale gas reservoirs using combined secondary and backscatter electron methods: An example from the Haynesville Shale, Texas and Louisiana, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 45-52.

Spalding, D., and A. Young, 2013, Backing fracing: UK government lays out shale gas incentives: Oil & Gas Journal, v. 111.9, p. 86-87.

Spanakos, D., and S.P. Rigby, 2020, Predicting surface diffusivities of gas molecules in shale: Energy & Fuels, v. 34, p. 12,417-12,428.

Sparkman, D., J. Belhadi, and G. Waters, 2009, Real-time monitoring ‘steers’ fractures: American Oil & Gas Reporter, v. 52, no. 12, p. 95-99.

Sparkman, M.A., 2006, Factors contributing to shale anisotropy: investigation of shale anisotropy through mineralogy based theoretical modeling: Norman, University of Oklahoma, unpublished M.S. thesis.

Spathopoulos, F., and M.A. Sephton, 2013, Unconventional petroleum plays in the Mediterranean basins: AAPG Search and Discovery Article #10495, 51 p. <http://www.searchanddiscovery.com/documents/2013/10495spathopoulos/ndx_spathopoulos.pdf>

SPE, 1996, Production from fractured shales: Society of Petroleum Engineers Reprint Series #45, 269 p.

Spikes, K.T., and M. Jiang, 2013, Rock physics relationships between elastic and reservoir properties in the Haynesville Shale, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 189-203.

Sprunt, E., 2011, Unconventional resources move to center stage: Hart Energy Publishing, E&P, v. 84, no. 12, p. 37-38.

Sprunt, E., 2014, Why supermajors botched unconventionals: Shale Technology Review, supplement to World Oil, v. 235, no. 3, p. S-63 to S-64.

Sprunt, E., 2014, Factory drilling is no substitute for formation evaluation: Shale Technology Review, supplement to World Oil, v. 235, no. 7, p. S-127 to S-128.

Sprunt, E., 2015, Leverage people and data to prosper in lean times: Shaletech Report, supplement to World Oil, v. 236, no. 3, p. S-5, S-7.

Staerker, T.S., P.R. Thompson, A. Cantu-Chapa, I. Pujana, and T.M. Boesiger, 2013, Biostratigraphic correlation and biofacies of the Haynesville Shale and Bossier Shale in east Texas and western Louisiana, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 103-135.

Stamets, B., 2010, Big oil in big shale: Hart Energy Publishing, E&P, v. 83, no. 2, p. 84.

Stark, P., and L.K. Smith, 2017, Giant oil and gas fields of the 2000s: A new century ushers in deeper water, unconventionals, and more gas, in R.K. Merrill and C.A. Sternbach, eds., Giant fields of the decade 2000–2010: AAPG Memoir 113, p. 15-28.

Stark, P.H., B. Fryklund, S. DeVito, and A. Chakhmakhchev, 2011, Independents setting sights on international opportunities in deep water, shale and EOR: American Oil & Gas Reporter, v. 54, no. 4, p. 44-55.

Stark, P.H., 2012, Shale gas, tight oil and EOR creating rare opportunity for industry and nation, part two: American Oil & Gas Reporter, v. 55, no. 2, p. 44-55.

Stayton, R.J., 2005, Drilling technologies optimize development of unconventional plays: American Oil & Gas Reporter, v. 48, no. 9, p. 64-69.

Steed, M.B., 2009, Sequence stratigraphy of the Barnett Shale (Mississippian), northern Fort Worth Basin, Texas: Fort Worth, TX, Texas Christian University, unpublished M.S. thesis.

Steinhoff, I., A.D. Cicero, K. Koepke, J. Dezelle, T. McClain, and C. Gillett, 2010, Understanding the regional Haynesville and Bossier Shale depositional systems in east Texas and northern Louisiana: an integrated structural/stratigraphic approach: AAPG Search and Discovery Article #90108, 6 p.

Stell, J., 2007, Appalachian transfer: In its Appalachian shale-gas and coalbed-methane plays, Equitable Resources is applying horizontal-drilling, air-drilling and smart water-handling technology: Oil and Gas Investor, v. 27, no. 12, p. 71-72.

Stell, J., 2008, Barnett gas unstranded: Oil and Gas Investor, v. 28, no. 3, p. 73-75.

Stell, J., 2008, Fayetteville give and take: Oil and Gas Investor, v. 28, no. 5, p. 57-59.

Stell, J., 2008, Banking Haynesville Shale: Oil and Gas Investor, v. 28, no. 9, p. 83-84.

Stell, J., 2009, Barnett players: Oil and Gas Investor, v. 29, no. 3, p. 65-69.

Stell, J., 2009, Rockies unconventional: Oil and Gas Investor, v. 29, no. 4, p. 67-70.

Stell, J., 2009, Marcellus players tout its economics, vast productive area: Oil and Gas Investor, v. 29, no. 5, p. 28-29.

Stell, J., 2009, Romancing the midstream: Oil and Gas Investor, v. 29, no. 7, p. 67-69. (Haynesville pipeline)

Stell, J., 2010, Marcellus methane: Oil and Gas Investor, v. 30, no. 4, p. 120.

Stell, J., 2010, Financing the shales; new funding boosts upside: Oil and Gas Investor, v. 30, no. 5, p. 61-63. (Marcellus)

Stell, J., 2010, Caiman Energy breaks ground for producers in the Marcellus Shale play: Midstream Business Report, A supplement to Oil and Gas Investor, p. 21-25.

Stell, J., 2010, Marcellus harmonies: Oil and Gas Investor, v. 30, no. 8, p. 67-68.

Stell, J., 2013, Top resource plays drive midstream project growth, in Global unconventional yearbook: Houston, Hart Energy Publishing, p. 146-164.

Steullet, A.K., 2014, An integrated paleomagnetic and diagenetic study of the Marcellus Shale within the Plateau Province of the Appalachian Basin: Norman, University of Oklahoma, unpublished M.S. thesis, 80 p.

Stevens, S., and V. Kuuskraa, 2009, Gas shale–1: Seven plays dominate North America activity: Oil & Gas Journal, v. 107.36, p. 39-49.

Stevens, S., M. Godec, and K. Moodhe, 2009, Gas shale–Conclusion: New plays emerge, although environmental issues arise: Oil & Gas Journal, v. 107.39, p. 39-45.

Stevens, S.H. and K.D. Moodhe, 2015, Evaluation of Mexico’s shale oil and gas potential: SPE Latin American and Caribbean Petroleum Engineering Conference, SPE Paper 177139, 15 p. <https://www.onepetro.org/download/conference-paper/SPE-177139-MS?id=conference-paper%2FSPE-177139-MS>

Stevens, S., and K. Moodhe, 2016, New bid round accelerates Mexico’s shale potential: Oil & Gas Journal, v. 114.6, p. 39-42.

Stevenson, D.L., and D.R. Dickerson, 1969, Organic geochemistry of the New Albany Shale in Illinois: Illinois State Geological Survey, Illinois Petroleum 90, 11 p. <http://www.isgs.uiuc.edu/pttc/Illinois%20petroleum/IP090%20Organic%20Geochemistry%20of%20the%20New%20Albany%20Shale%20in%20Illinois.pdf>

Steward, D., 2005, Current state of Barnett Shale technology: the latest from north Texas, in P. Lufholm and D. Cox, eds., 2005 WTGS Fall Symposium: West Texas Geological Society, Publication No. 05-115, p. 37.

Steward, D.B., 2007, The Barnett Shale play: Phoenix of the Fort Worth Basin, a history: Fort Worth Geological Society and North Texas Geological Society, 202 p.

Steward, D.B., 2008, Evolution of the Barnett Shale play: Hart Energy Publishing, E&P, v. 81, no. 3, p. 22-24.

Stigant, J., 2012, Geospatial data quality and mapping in shale plays—Technical and business impact: AAPG Search and Discovery Article #40940, 33 p.

Stock, A.T., R. Littke, J. Schwarzbauer, B. Horsfield, and C. Hartkopf-Frőder, 2017, Organic geochemistry and petrology of Posidonia Shale (Lower Toarcian, western Europe) — The evolution from immature oil-prone to overmature dry gas-producing kerogen: International Journal of Coal Geology, v. 176-177, p. 36-48.

Stokley, C.O., 2016, Efficient, multi-zone testing enhances re-frac design and implementation: World Oil, v. 237, no. 3, p. 78-79.

Stoneburner, R.K., 2010, The Haynesville Shale: What we have learned in the first two years: SIPES Quarterly, v. 46, no. 3, p. 1, 22-27.

Stoneburner, R.K., 2015, The exploration, appraisal and development of unconventional reservoirs: A new approach to petroleum geology: AAPG Search and Discovery Article #110181, 56 p. <http://www.searchanddiscovery.com/pdfz/documents/2015/110181stoneburner/ndx_stoneburner.pdf.html>

Stoneburner, R.K., 2017, The evolution of the American shale plays: Where we are and how we got there: AAPG Search and Discovery Article #110228, 30 p. <http://www.searchanddiscovery.com/pdfz/documents/2017/110228stoneburner/ndx_stoneburner.pdf.html>

Strąpoć, D., M. Mastalerz, A. Schimmelmann, A. Drobniak, and N.R. Hasenmueller, 2010, Geochemical constraints on the origin and volume of gas in the New Albany Shale (Devonian-Mississippian), eastern Illinois Basin: AAPG Bulletin, v. 94, p. 1713-1740.

Stratas Advisors, 2015, Production forecase: Production plans, optimization continue, in North American unconventional yearbook: Houston, Hart Energy Publishing, p. 160-167.

Stratas Advisors, 2017, Shale remains resilient through market downturn, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 72-84.

Stricklin, R., J. Coburn, and S. Charpiot, 2013, Urban drilling in the Barnett Shale: World Oil, v. 234, no. 2, p. 89-90.

Stueck, H., D. Houseknecht, D. Franke, D. Gautier, A. Bahr, and S. Ladage, 2016, Shale-gas assessment: Comparison of gas-in-place versus performance-based approaches: Natural Resources Research, v. 25, p. 315-329.

Suárez-Ruiz, I., and J.G. Mendonça Filho, eds., 2017, The role of organic petrology in the exploration of conventional and unconventional hydrocarbon systems: Sharjah, U.A.E., Bentham Science Publishers, 355 p.

Suchy, D.R., and K.D. Newell, 2012, Hydraulic fracturing of oil and gas wells in Kansas: Kansas Geological Survey, Public Information Circular 32, 6 p. <http://www.kgs.ku.edu/Publications/PIC/PIC32r1.pdf>

Suhy, T.E., 2008, Uncovering and exploiting existing Marcellus Shale opportunities in the Appalachian Basin: SPE-117751.

Sullivan, J.A., 2008, Haynesville dominates Louisiana lease sale: ‘modern day gold rush’: Oil & Gas Investor, v. 28, no. 7, p. 30.

Sullivan, J.A., 2008, WoodMac: Rockies shale-gas plays hold huge potential: Oil and Gas Investor, v. 28, no. 8, p. 23-24.

Sullivan, J.A., 2008, RRC Chairman: Barnett shows urban resources can be developed safely: Oil and Gas Investor, v. 28, no. 8, p. 50, 52.

Sullivan, J.A., 2008, Bernstein’s Dell: Haynesville late-comers need $9 gas prices: Oil and Gas Investor, v. 28, no. 11, p. 23-26.

Sullivan, J.A., 2008, Rockies shale-gas may hold huge potential: Oil and Gas Investor, An Investor’s Guide to the Rockies, p. 19-20.

Summers, B.R., 2013, Variation of lithology in the Haynesville Shale observed with LWD tools, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 205-217.

Sun, J., X. Dong, J. Wang, D.R. Schmitt, C. Xu, T. Mohammed, and D. Chen, 2016, Measurement of total porosity for gas shales by gas injection porosimetry (GIP) method: Fuel, v. 186, p. 694-707.

Sun, M., B. Yu, Q. Hu, S. Chen, W. Xia, and R. Ye, 2016, Nanoscale pore characteristics of the Lower Cambrian Niutitang Formation shale: A case study from well Yuke #1 in the southeast of Chongqing, China: International Journal of Coal Geology, v. 154-155, p. 16-29.

Sun, M., B. Yu, Q. Hu, R. Yang, Y. Zhang, and B. Li, 2017, Pore connectivity and tracer migration of typical shales in south China: Fuel, v. 203, p. 32-46.

Sun, M., B. Yu, Q. Hu, Y. Zhang, B. Li, R. Yang, Y.B. Melnichenko, and G. Cheng, 2017, Pore characteristics of Longmaxi shale gas reservoir in the northwest of Guizhou, China: Investigations using small-angle neutron scattering (SANS), helium pycnometry, and gas sorption isotherm: International Journal of Coal Geology, v. 171, p. 61-68.

Sun, M., B. Yu, Q. Hu, R. Yang, Y. Zhang, B. Li, Y.B. Melnichenko, and G. Cheng, 2018, Pore structure characterization of organic-rich Niutitang shale from China: Small angle neutron scattering (SANS) study: International Journal of Coal Geology, v. 186, p. 115-125.

Sun, M., L. Zhang, Q. Hu, Z. Pan, B. Yu, L. Sun, L. Bai, L.D. Connell, Y. Zhang, and G. Chang, 2019, Pore connectivity and water accessibility in Upper Permian transitional shales, southern China: Marine and Petroleum Geology, v. 107, p. 407-422.

Sun, P., H. Zhu, H. Xu, X. Hu, and L. Tian, 2020, Factors affecting the nanopore structure and methane adsorption capacity of organic-rich marine shales in Zhaotong area, southern Sichuan Basin: Interpretation, v. 8, p. T403-T419.

Sun, S., F. Liang, L. Tang, J. Wu, and C. Ma, 2017, Microstructural investigation of gas shale in Longmaxi Formation, Lower Silurian, NE Sichuan Basin, China: Energy Exploration & Exploitation, v. 35, p. 406-429.

Sun, Y., Q. Wu, M. Wei, B. Bai, and Y. Ma, 2014, Experimental study of friction reducer flows in microfracture: Fuel, v. 131, p. 28-35.

Sutton, R.P., S.A. Cox, and R.D. Barree, 2011, Study analyzes gas shale performance: American Oil & Gas Reporter, v. 54, no. 10, p. 88-97.

Suzuki, N., H. Saito, and T. Hoshino, 2017, Hydrogen gas of organic origin in shales and metapelites: International Journal of Coal Geology, v. 173, p. 227-236.

Swanson, C., W.A. Hill, G. Nilson, C. Griman, R.M. Hill, P. Sullivan, C. Aften, J.C. Jimenez, G. Pietrangeli, D.C. Shedd, and J.T. Purlsey, 2018, Post-frac hit mitigation and well remediation of Woodford horizontal wells using a solvent/surfactant chemistry blend: Unconventional Resources Technology Conference, URTeC 2902400, 16 p.

Tahmasebi, P., F. Javadpour, and M. Sahimi, 2016, Stochastic shale permeability matching: Three-dimensional characterization and modeling: International Journal of Coal Geology, v. 165, p. 231-242.

Tahmasebi, P., F. Javadpour, and S.F. Enayati, 2020, Digital rock techniques to study shale permeability: A mini-review: Energy Fuels, v. 34, p. 15,672-15,685.

Tan, J., B. Horsfield, N. Mahlstedt, J. Zhang, R. di Primio, T.A.T. Vu, C.J. Boreham, G. van Graas, and B.A. Tocher, 2013, Physical properties of petroleum formed during maturation of Lower Cambrian shale in the upper Yangtze Platform, South China, as inferred from PhaseKinetics modeling: Marine and Petroleum Geology, v. 48, p. 47-56.

Tan, J., P. Weniger, B. Krooss, A. Merkel, B. Horsfield, J. Zhang, C.J. Boreham, G. van Graas, and B.A. Tocher, 2014, Shale gas potential of the major marine shale formations in the Upper Yangtze Platform, South China, Part II: Methane sorption capacity: Fuel, v. 129, p. 204-218.

Tan, J., R. Hu, W. Wang, and J. Dick, 2020, Palynological analysis of the late Ordovician–early Silurian black shales in South China provides new insights for the investigation of pore systems in shale gas reservoirs: Marine and Petroleum Geology, v. 116, 104145.

Tan, X., E. Gilliland, X. Tang, and N. Ripepi, 2021, Integrated experimental characterization of shales of varying thermal maturation in the central Appalachian Basin using Raman and Fourier Transform Infrared Spectroscopy and Atomic Force Microscopy: Energy Fuels, v. 35, p. 201-212.

Tan, Y., Z. Pan, J. Liu, X.-T. Feng, and L.D. Connell, 2018, Laboratory study of proppant on shale fracture permeability and compressibility: Fuel, v. 222, p. 83-97.

Tan, Y., Z. Pan, X.-T. Feng, D. Zhang, L.D. Connell, and S. Li, 2019, Laboratory characterisation of fracture compressibility for coal and shale gas reservoir rocks: A review: International Journal of Coal Geology, v. 204, p. 1-17.

Tang, L., Y. Song, Z. Jiang, S. Jiang, and Q. Li, 2019, Pore structure and fractal characteristics of distinct thermally mature shales: Energy & Fuels, v. 33, p. 5116-5128.

Tang, Q., M. Zhang, C. Cao, Z. Song, Z. Li, and X. Hu, 2015, The molecular and carbon isotopic constrains on origin and storage of Longmaxi Formation shale gas in Changning area, Sichuan Basin, China: Interpretation, v. 3, no. 2, p. SJ35-SJ47.

Tang, X., J. Zhang, Y. Bingsong, and W. Ding, 2013, Shale gas characteristics in the southeastern part of the Ordos Basin, China: Implications for the accumulation condition and potential of continental shale gas: AAPG Search and Discovery Article 10481, 44 p. <http://www.searchanddiscovery.com/documents/2013/10481tang/ndx_tang.pdf>

Tang, X., J. Zhang, X. Wang, B. Yu, W. Ding, and L. Zhang, 2013, Geochemical characteristics and estimation of gas content of the Low-middle mature continental shales: A case study from the Ordos Basin: AAPG Search and Discovery Article #10517, 35 p. <http://www.searchanddiscovery.com/documents/2013/10517tang/ndx_tang.pdf>

Tang, X., J. Zhang, X. Wang, B. Yu, W. Ding, J. Xiong, Y. Yang, L. Wang, and C. Yang, 2014, Shale characteristics in the southeastern Ordos Basin, China: Implications for hydrocarbon accumulation conditions and the potential of continental shales: International Journal of Coal Geology, v. 128-129, p. 32-46. (clay rich; lacustrine)

Tang, X., J. Zhang, J. Jin, J. Xiong, L. Lin, Y. Yu, and S. Han, 2015, Experimental investigation of thermal maturation on shale reservoir properties from hydrous pyrolysis of Chang 7 shale, Ordos Basin: Marine and Petroleum Geology, v. 64, p. 165-172.

Tang, X., N. Ripepi, N.P. Stadie, L. Yu, and M.R. Hall, 2016, A dual-site Langmuir equation for accurate estimation of high pressure deep shale gas resources: Fuel, v. 185, p. 10-17.

Tang, X., Z. Jiang, S. Jiang, L. Cheng, and Y. Zhang, 2016, Characteristics and origin of in-situ desorption of the Cambrian Shuijingtuo Formation shale gas reservoir in the Sichuan Basin, China: Fuel, v. 187, p. 285-295.

Tang, X., Z. Jiang, S. Jiang, and Z. Li, 2016, Heterogeneous nanoporosity of the Silurian Longmaxi Formation shale gas reservoir in the Sichuan Basin using the QEMSCAN, FIB-SEM, and nano-CT methods: Marine and Petroleum Geology, v. 78, p. 99-109.

Tang, X., N. Ripepi, N.P. Stadie, and L. Yu, 2017, Thermodynamic analysis of high pressure methane adsorption in Longmaxi shale: Fuel, v. 193, p. 411-418.

Tang, X., S. Jiang, Z. Jiang, Z. Li, Z. He, S. Long, and D. Zhu, 2019, Heterogeneity of Paleozoic Wufeng-Longmaxi formation shale and its effect on the shale gas accumulation in the Upper Yangtze region, China: Fuel, v. 239, p. 387-402.

Tang, Y., R. Yang, J. Zhu, S. Yin, T. Fan, L. Dong, and Y. Hou, 2019, Analysis of continental shale gas accumulation conditions in a rifted basin: A case study of Lower Cretaceous shale in the southern Songliao Basin, northeastern China: Marine and Petroleum Geology, v. 101, p. 389-409.

Taylor, B., 2010, East Texas Haynesville: Oil and Gas Investor, v. 30, no. 5, p. 38-50.

Taylor, B., 2010, Unconventional in Turkey: Oil and Gas Investor, v. 30, no. 7, p. 67-69.

Taylor, P., 2015, Shale gas—catalyst for commercial growth: Hart Energy Publishing, E&P, v. 88, no. 1, p. 8-9.

Taylor, P., 2015, Shale gas: Industry revolution or public revolt?: Shaletech Report, supplement to World Oil, v. 236, no. 3, p. S-8 to S-9.

Templeton, G.W., A. Broussard, and D. Travis, 2010, Fayetteville Shale wells benefit from cementless lateral technique: World Oil, v. 231, no. 6, p. 29-34.

Tennyson, M.E., R.R. Charpentier, T.R. Klett, M.E. Brownfield, J.K. Pitman, S.B. Gaswirth, S.J. Hawkins, P.G. Lillis, K.R. Marra, T.J. Mercier, H.M. Leathers, C.J. Schenk, and K.J. Whidden, 2015, Assessment of undiscovered continuous oil and gas resources in the Monterey Formation, San Joaquin Basin Province, California, 2015: U.S. Geological Survey Fact Sheet 2015-3058, 2 p. <http://pubs.er.usgs.gov/publication/fs20153058>

Terracina, J.M., 2011, Factors impact proppant performance: American Oil & Gas Reporter, v. 54, no. 7, p. 127-135. (Fayetteville, Bakken, Haynesville)

Terrell, H., 2012, Shale gas development and the public mind—Educating trogs and smart idiots: World Oil, v. 233, no. 3, p. 21.

Terrell, H., 2012, Gas prices and shale economics—dealing with rapid descent: World Oil, v. 233, no. 7, p. 23.

Terrell, H., 2013, British shale gas: More holes for Blackool, Lancashire?: World Oil, v. 234, no. 1, p. 23.

Terrell, H., 2013, Sustainable shale gas in Appalachia: A greenhouse divided: World Oil, v. 234, no. 4, p. 27.

Terrell, H., 2015, In the sport of shale drilling, you can have a do-over: World Oil, v. 236, no. 2, p. 23. (refracing)

Testa, S.M., C.F. Hoffman, and M.J. Mavor, 2003, Reservoir property analysis, Mangles 24-2SD, Woodford Shale, Cherokee Basin: Chicago, Illinois, Gas Research Institute Report 04/0060, 46 p.

Testa, S.M., and T.J. Pratt, 2003, Sample preparation for coal and shale gas resource assessment: Tuscaloosa, Alabama, 2003 International Coalbed Methane Symposium, Paper 356, 13 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in New York: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-118, 46 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in Pennsylvania: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-119, 81 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in eastern Kentucky/Tennessee: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-121, 87 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in Ohio: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-122, 64 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in Michigan: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-123, 31 p.

Tetra Tech, 1981, Evaluation of Devonian shale potential in the Illinois Basin: U.S. Department of Energy, Morgantown Energy Technology Center, DOE/METC-124, 36 p.

Tewari, A., S. Dutta, and T. Sarkar, 2016, Organic geochemical characterization and shale gas potential of the Permian Barren Measures Formation, west Bokaro sub-basin, eastern India: Journal of Petroleum Geology, v. 39, p. 49-60.

Thomas, J., Jr., and R.R. Frost, 1980, Adsorption/desorption studies of gases through shales, in R.E. Bergstrom, N.F. Shimp, and R.M. Cluff, eds., Geologic and geochemical studies of the New Albany Shale Group (Devonian-Mississippian) in Illinois: U.S. Department of Energy, Morgantown Energy Technology Center, Report METC/12142-26, p. 143-160.

Thomas, M., 2012, Shale’s ripple effect goes global: Hart Energy Publishing, E&P, v. 85, no. 7, p. 32-34, 36-38.

Thomas, M., 2014, UK incubating shale’s early growth: Hart Energy Publishing, E&P, v. 87, no. 2, p. 110-113.

Thomas, M., 2014, Olympics provide spark for China’s unconventional gas drive: Hart Energy Publishing, E&P, v. 87, no. 3, p. 106-107.

Thomas, M., 2014, ‘Potential’ the key word as Europe eyes unconventionals: Hart Energy Publishing, E&P, v. 87, no. 7, p. 44, 46-47.

Thomas, M., 2014, Much ado about little…: Hart Energy Publishing, E&P, v. 87, no. 11, p. 98-100. (Europe)

Thomas, M., 2015, Momentum builds in China’s emerging shale gas sector: Hart Energy Publishing, E&P, v. 88, no. 1, p. 96-98.

Thomas, M., 2015, Europe’s shale gale a gentle breeze: Hart Energy Publishing, E&P, v. 88, no. 6, p. 44, 46.

Thomas, M., 2016, Shale fueled by Fuling on its slow boat to China: Hart Energy Publishing, E&P, v. 89, no. 1, p. 74, 76.

Thomas, M., 2016, Saudi shale drive powering up: Hart Energy Publishing, E&P, v. 89, no. 6, p. 70, 72.

Thompson, A.M., 2010, Induced fracture detection in the Barnett Shale, Ft. Worth Basin, Texas: Norman, Oklahoma, University of Oklahoma, unpublished M.S. thesis, 69 p.

Thompson, G., 2011, Challenges hamper China’s near-term unconventional development: Hart Energy Publishing, E&P, v. 84, no. 1, p. 89, 91, 93.

Thompson, M., 2012, The Haynesville cools down: Midstream Business, A supplement to Oil and Gas Investor, v. 2, no. 8, p. 60-63.

Thorn, T.H., 2015, Gas shale environmental issues and challenges, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 381-395.

Thornhill, S., 2012, O Canada!, in Canada playbook: Houston, Hart Energy Publishing, p. 4-11. (Bakken, Duvernay, Exshaw, Montney, Cardium)

Thornhill, S., 2013, The prolific Permian Basin still pays, in Permian Basin: the 2013 playbook: Houston, Hart Energy Publishing, p. 4-16.

Thornhill, S., 2013, Devonian Period left behind Midcontinent playground, in Midcontinent playbook: Houston, Hart Energy Publishing, p. 4-14.

Thornhill, S., 2014, A geologic review of the top 20 US resource plays, in 2014 US Unconventional yearbook: Houston, Hart Energy Publishing, p. 2-22.

Thornhill, S., Rockies tight sands and shales: overview: A geological goldmine, in Rockies tight sands and shales playbook: Houston, Hart Energy Publishing, p. 4-19.

Thornhill, S., 2014, Operators see economic potential in Tuscaloosa Marine Shale play, in Tuscaloosa Marine Shale playbook: Houston, Hart Energy Publishing, p. 4-11.

Thornhill, S., 2015, A geologic review of the top 20 plays of North America, in North American unconventional yearbook: Houston, Hart Energy Publishing, p. 5-20.

Thorogood, J.L., and P.L. Younger, 2015, Discussion of “Oil and gas wells and their integrity: Implications for shale and unconventional resource exploitation” by R.J. Davies, S. Almond, R.S. Ward, R.B. Jackson, C. Adams, F. Worrall, L.G. Herringshaw, J.G. Gluyas, and M.A. Whitehead: Marine and Petroleum Geology, v.59, p. 671-673.

Tian, H., L. Pan, X. Xiao, R.W.T. Wilkins, Z. Meng, and B. Huang, 2013, A preliminary study on the pore characterization of Lower Silurian black shales in the Chuandong Thrust Fold Belt, southwestern China using low pressure N2 adsorption and FE-SEM methods: Marine and Petroleum Geology, v. 48, p. 8-19.

Tian, H., L. Pan, T. Zhang, X. Xiao, Z. Meng, and B. Huang, 2015, Pore characterization of organic-rich Lower Cambrian shales in Qinnan Depression of Guizhou Province, southwestern China: Marine and Petroleum Geology, v. 62, p. 28-43.

Tian, H., T. Li, T. Zhang, and X. Xiao, 2016, Characterization of methane adsorption on overmature Lower Silurian–Upper Ordovician shales in Sichuan Basin, southwest China: Experimental results and geological implications: International Journal of Coal Geology, v. 156, p. 36-49. (gas-in-place)

Tian, W., X. Wu, D. Liu, A. Knaup, C. Chen, and C. Sondergeld, 2019, Investigating effects of pore size distribution and pore shape on radon production in Marcellus Shale gas formation: Energy & Fuels, v. 33, p. 700-707.

Tian, Y., and W.B. Ayers, Jr., 2009, Regional stratigraphic and sedimentary facies analyses, Barnett Shale, Fort Worth Basin, Texas: 2009 International Coalbed & Shale Gas Symposium, Tuscaloosa, AL, Paper 0919.

Tian, Y., 2010, An investigation of regional variations of Barnett Shale reservoir properties, and resulting variability of hydrocarbon composition and well performance: Texas A&M University, unpublished M.S. thesis, 101 p.

<http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2010-05-7829/TIAN-THESIS.pdf>

Tilford, M.J., and M.R. Stewart, 2011, Barnett Shale and Atoka conglomerate: the next horizontal oil and gas play in Oklahoma: Oklahoma City Geological Society, Shale Shaker, v. 62, no. 1, p. 10-31.

Tilley, B., S. McLellan, S. Hiebert, B. Quartero, B. Veilleux, and K. Muehlenbachs, 2011, Gas isotope reversals in fractured gas reservoirs of the western Canadian Foothills: Mature shale gases in disguise: AAPG Bulletin, v. 95, p. 1399-1422.

Timko, D., L. Schick, and J. Sorrells, 2015, Low-cost method increases lesser known shale formations’ prospectivity: Oil & Gas Journal, v. 113.11, p. 48-55.

Tinni, A., E. Odusina, I. Sulucarnain, C. Sondergeld, and C.S. Rai, 2015, Nuclear-Magnetic-Resonance response of brine, oil, and methane in organic-rich shales: SPE Reservoir Evaluation & Engineering, v. 18, p. 400-406.

Tipton, D.S., 2013, Water management strategy key to Newfield’s success in Mid-Continent resource plays: American Oil & Gas Reporter, v. 56, no. 8, p. 66-75.

Toal, B.A., 2007, Fayetteville and Woodford shales: Oil and Gas Investor, v. 27, no. 6, p. 38-49.

Toal, B.A., 2008, Unconventional play advantages: Oil & Gas Investor, v. 28, no. 7, p. 128.

Toelle, B., and N. Maache, 2015, Rank exploration of selected European shale plays: Interpretation, v. 3, no. 3, p. SU47-SU58.

Tokunaga, T.K., W. Shen, J. Wan, Y. Kim, A. Cihan, Y. Zhang, and S. Finsterle, 2017, Water saturation relations and their diffusion-limited equilibration in gas shale: Implications for gas flow in unconventional reservoirs: American Geophysical Union, Water Resources Research, p. 9757-9770.

Toon, S., 2007, It’s not too late to break into the Fayetteville Shale: Oil and Gas Investor, v. 27, no. 10, p. 26-30.

Toon, S., 2008, Shale-gas deals 23% of 2007 A&D through April: Oil & Gas Investor, v. 28, no. 7, p. 23-24.

Toon, S., 2008, Petrohawk chief: Haynesville now 80% leased: Oil & Gas Investor, v. 28, no. 7, p. 26.

Toon, S., 2008, Shale plays: Oil and Gas Investor, v. 28, no. 10, p. 168.

Toon, S., 2008, Shale law: Oil and Gas Investor, v. 28, no. 12, p. 57-58.

Toon, S., 2009, Unconventional-resource A&D: Oil and Gas Investor, v. 29, no. 4, p. 48-60.

Toon, S., 2009, Cost vs. reward: organic, inorganic shale-gas economics: Oil and Gas Investor, v. 29, no. 6, p. 21.

Toon, S., 2009, U.S. gas supply, remember the Fayetteville: Oil and Gas Investor, v. 29, no. 6, p. 49-51.

Toon, S., 2009, Make room for a major: Houston, Hart Energy Publishing, Marcellus Playbook, p. 16-20.

Toon, S., 2009, Stoneburner: Eagle Ford shale ‘very, very commercial’: Oil and Gas Investor, v. 29, no. 8, p. 28, 33.

Toon, S., 2009, Barnett blues: Houston, Hart Energy Publishing, Barnett Playbook, p. 12-15.

Toon, S., 2010, Top E&P shale stocks: Oil and Gas Investor, v. 30, no. 5, p. 53-56.

Toon, S., 2010, Marcellus madness: Oil and Gas Investor, v. 30, no. 7, p. 57-59.

Toon, S., 2010, Marcellus momentum: Oil and Gas Investor, v. 30, no. 11, p. 42-55.

Toon, S., 2011, Eagle Ford rising: Oil and Gas Investor, v. 31, no. 2, p. 46-59.

Toon, S., 2011, Utica awakens: Oil and Gas Investor, v. 31, no. 10, p. 11.

Toon, S., 2011, Making headway in the Marcellus: Oil and Gas Investor, v. 31, no. 11, p. 48-59.

Toon, S., 2011, Eagle Ford output continues to soar: Hart Energy Publishing, E&P, v. 84, no. 10, p. 72-78.

Toon, S., 2012, Understanding the Utica: Oil and Gas Investor, v. 32, no. 1, p. 81-83. (Utica-Point Pleasant play)

Toon, S., 2012, Developing giant: Oil and Gas Investor, v. 32, no. 6, p. 55-57. (Utica)

Toon, S., 2012, Extending the Utica: Oil and Gas Investor, v. 32, no. 11, p. 46-60.

Toon, S., 2013, Hope for Montana’s Heath: Oil and Gas Investor, v. 33, no. 7, p. 71-72.

Toon, S., 2013, South Utica excites: Oil and Gas Investor, v. 33, no. 11, p. 42-55.

Toon, S., 2013, Eagle Ford dry: Oil and Gas Investor, v. 33, no. 11, p. 112.

Toon, S., 2014, Lessons from the Fayetteville: Oil and Gas Investor, v. 34, no. 1, p. 91-94.

Toon, S., 2014, Much ado about Marcellus: Oil and Gas Investor, v. 34, no. 6, p. 48-60.

Toon, S., 2014, Marcellus squeezed: Oil and Gas Investor, v. 34, no. 6, p. 116.

Toon, S., 2014, Ranking the shales: Oil and Gas Investor, v. 34, no. 10, p. 65-67.

Toon, S., 2015, West Virginia rising: Oil and Gas Investor, v. 35, no. 2, p. 38-51. (Marcellus)

Toon, S., 2015, Southwestern’s new play: Oil and Gas Investor, v. 35, no. 4, p. 53-55. (Marcellus)

Toon, S., 2015, Central Anadarko upswing: Oil and Gas Investor, v. 35, no. 10, p. 57-59. (Woodford)

Toon, S., 2015, Unleashing Appalachia’s gas: Oil and Gas Investor, v. 35, no. 11, p. 44-56. (Marcellus, Utica)

Toon, S., 2016, Fighting for margins: Oil and Gas Investor, v. 36, no. 3, p. 49-52. (Utica)

Toon, S., 2017, Stacked and merged: Oil and Gas Investor, v. 37, no. 6, p. 68-69.

Toon, S., 2018, San Juan rising: Oil and Gas Investor, v. 38, no. 1, p. 52-65. (Mancos)

Topór, T., A. Derkowski, U. Kuila, T.B. Fischer, and D.K. McCarty, 2016, Dual liquid porosimetry: A porosity measurement technique for oil- and gas-bearing shales: Fuel, v. 183, p. 537-549.

Topór, T., A. Derkowski, P. Ziemiański, L. Marynowski, and D.K. McCarty, 2017, Multi-variable constraints of gas exploration potential in the Lower Silurian shale of the Baltic Basin (Poland): International Journal of Coal Geology, v. 179, p. 45-59.

Topór, T., A. Derkowski, P. Ziemiański, J. Szczurowski, and D.K. McCarty, 2017, The effect of organic matter maturation and porosity evolution on methane storage potential in the Baltic Basin (Poland) shale-gas reservoir: International Journal of Coal Geology, v. 180, p. 46-56.

Torkelson, D., 2007, Woodford Shale play hot in Oklahoma: American Oil & Gas Reporter, v. 50, no. 5, p. 161-164.

Torkelson, D., 2008, Marcellus Shale potential headed for fulfillment: American Oil & Gas reporter, v. 51, no. 4, p. 148-150.

Torkelson, D., 2008, Cradle of oil and gas ready for rebirth: American Oil & Gas Reporter, v. 51, no. 8, p. 186-189. (Marcellus Shale)

Torkelson, D., 2009, SRBC announces water regulations: American Oil & Gas Reporter, v. 52, no. 1, p. 205-206. (Marcellus Shale)

Torkelson, D., 2009, Proppant innovation continues apace: American Oil & Gas Reporter, v. 52, no. 12, p. 105-113.

Torkelson, D., 2010, Marcellus and Haynesville grab industry’s attention as gas shale giants (part 3): American Oil & Gas Reporter, v. 53, no. 3, p. 72-89.

Torkelson, D., 2011, Clean Air Act: EPA releases air rules for fracturing: American Oil & Gas Reporter, v. 54, no. 9, p. 33-34.

Torkelson, D., 2012, Pennsylvania passes shale impact fee: American Oil & Gas Reporter, v. 55, no. 3, p. 141-144.

Totten, M.W., and A.S. Oko, 2007, Unconventional shale gas potential of the Floyd Shale in the Black Warrior Basin, northwestern Alabama (abstract): 2007 AAPG Annual Convention Abstracts CD. <http://aapg.confex.com/aapg/2007am/techprogram/A110400.htm>

Trabucho-Alexandre, J., 2015, Organic matter-rich shale depositional environments, in R. Rezaee, ed., Fundamentals of gas shale reservoirs: John Wiley & Sons, Inc., p. 21-45.

Tran, H., and A. Sakhaee-Pour, 2017, Viscosity of shale gas: Fuel, v. 191, p. 87-96.

Tran, M.H., and Y.N. Abousleiman, 2014, Integrated geosciences for optimal hydraulic fracturing of shale reservoirs: AAPG Search and Discovery Article 80351, 27 slides. <http://www.searchanddiscovery.com/documents/2014/80351tran/ndx_tran.pdf>

Tristone Capital, 2008, Can you smell what the rocks are cookin’? A 260 Tcf shale gas revolution: Tristone Capital Co., Denver, CO, Energy Investment Research, 235 p.

True, W.R., 2010, JV forms to expand Marcellus, Huron shale processing: Oil & Gas Journal, v. 108.21, p. 28-30.

True, W.R., 2011, Production growth has global gas processing set for expansion: Oil & Gas Journal, v. 109.13, p. 88-96.

True, W.R., 2012, Shale, East Africa plays could boost global LNG supplies: Oil & Gas Journal, v. 110.4, p. 122-132.

True, W.R., 2013, Rapid North American shale gas development pushes up global capacities: Oil & Gas Journal, v. 111.6, p. 74-88.

True, W.R., 2015, Despite downturn, US, Canada shales drive gas production, processing growth: Oil & Gas Journal, v. 113.6, p. 58-65, 68-69, 72, 74-76.

Truskowski, M., B. Dershowitz, and T. Taylor, 2012, Social, environmental issues can play havoc with shale plays: Hart Energy Publishing, E&P, v. 85, no. 6, p. 56, 58.

Tully, B.K., 2011, Canada’s gas future: Oil and Gas Investor, v. 31, no. 11, p. 83-85.

Tuo, J., C. Wu, and M. Zhang, 2016, Organic matter properties and shale gas potential of Paleozoic shales in Sichuan Basin, China: Journal of Natural Gas Science and Engineering, v. 28, p. 434-446.

Tuttle, T., and S.M. Hudson, 2018, Fine-scale spatial distribution of organofacies in the Mowry Shale, Wind River Basin, Lander, WY: AAPG Search and Discovery Article #51469, 27 p. <http://www.searchanddiscovery.com/pdfz/documents/2018/51469tuttle/ndx_tuttle.pdf.html>

Uffmann, A.K., R. Littke, and D. Rippen, 2012, Mineralogy and geochemistry of Mississippian and Lower Pennsylvanian black shales at the northern margin of the Variscan Mountain belt (Germany and Belgium): International Journal of Coal Geology, v. 103, p. 92-108.

Unconventional Resources Technology Conference, 2013, proceedings: <http://archives.datapages.com/data/browse/unconventional-resources-technology-conference-urtec/2013/>

Unconventional Resources Technology Conference, 2014, proceedings: <http://archives.datapages.com/data/browse/unconventional-resources-technology-conference-urtec/2014/>

USDOE, 2009, Modern shale gas development in the United States: a primer: U.S. Department of Energy and National Energy Technology Laboratory, 116 p. <http://www.netl.doe.gov/technologies/oil-gas/publications/EPreports/Shale_Gas_Primer_2009.pdf>

 <http://dnr.louisiana.gov/haynesvilleshale/ShaleGasPrimer2009.pdf>

USEIA, 2011, World shale gas resources: an initial assessment of 14 regions outside the United States: U.S. Energy Information Administration, 365 p. <http://www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf>

USGS Marcellus Shale Assessment Team, 2011, U.S. Geological Survey information relevant to the U.S. Geological Survey assessment of the Middle Devonian Marcellus Shale of the Appalachian Basin Province, 2011: U.S. Geological Survey Open-File Report 2011-1298, 13 p. <http://pubs.usgs.gov/of/2011/1298/>

USGS Michigan Basin Province assessment team, 2015, Geologic assessment of undiscovered oil and gas resources of the U.S. portion of the Michigan Basin: U.S. Geological Survey Digital Data Series DDS–69–T, 4 chaps.,variously paged, <http://pubs.usgs.gov/dds/dds-069/dds-069-t/>. (Antrim Shale)

USGS Oil and Gas Assessment Team, 2012, Variability of distributions of well-scale estimated ultimate recovery for continuous (unconventional) oil and gas resources in the United States: U.S. Geological Survey Open-File Report 2012–1118, 18 p. <http://pubs.usgs.gov/of/2012/1118/OF12-1118.pdf>

USGS National Assessment of Oil and Gas Resources Team and L.R.H. Biewick, 2013, Map of assessed shale gas in the United States, 2012: U.S. Geological Survey DDS 69-Z, 16 p. <http://pubs.usgs.gov/dds/dds-069/dds-069-z/>

USGS U.S. Continuous Resources Assessment Team, 2015, U.S. Geological Survey assessments of continuous (unconventional) oil and gas resources, 2000-2011: U.S. Geological Survey Data Series 69-MM, 46 p. <http://pubs.er.usgs.gov/publication/ds69MM>

USGS Mexico Assessment Team, 2015, Geology and assessment of unconventional oil and gas resources of northeastern Mexico: U.S. Geological Survey Open-File Report 2015-1112. <http://pubs.usgs.gov/of/2015/1112/>

Usher, C.T., 2012, 3-D data aid shale-field development: American Oil & Gas Reporter, v. 55, no. 1, p. 135-141.

Usoltsev, D., A. Acock, and A. Peña, 2015, Sequenced refracturing boosts production, EUR without drilling: Hart Energy Publishing, E&P, v. 88, no. 7, p. 85, 87-88.

Uvarova, Y., A. Yurikov, M. Pervukhina, M. Lebedev, V. Shulakova, M.B. Clennell, and D.N. Dewhurst, 2014, Microstructural characterization of organic-rich shale before and after yrolysis: APPEA Journal 2014, p. 249-258.

Vafaie, A., and I.R. Kivi, 2020, An investigation on the effect of thermal maturity and rock composition on the mechanical behavior of carbonaceous shale formations: Marine and Petroleum Geology, v. 116, 104315.

Vagnetti, R., and J. Ciferno, 2019, Federal field laboratories improving production efficiency, minimizing environmental impacts: World Oil, v. 240, no. 5, p. 45-48.

Valentine, B.J., P.C. Hackley, C.B. Enomoto, A.M. Bove, F.T. Dulong, C.D. Lohr, and K.R. Scott, 2014, Organic petrology of the Aptian-age section in the downdip Mississippi Interior Salt Basin, Mississippi, USA: Observations and preliminary implications for thermal maturation history: International Journal of Coal Geology, v. 131, p. 378-391.

Valentine, B.J., and P.C. Hackley, 2019, Applications of correlative light and electron microscopy (CLEM) to organic matter in the North American shale petroleum systems, in W.K. Camp, K.L. Milliken, K. Taylor, N. Fishman, P.C. Hackley, and J.H.S. Macquaker, eds., Mudstone diagenesis: Research perspectives for shale hydrocarbon reservoirs, seals, and source rocks: AAPG Memoir 120, p. 1-17.

Valenza, II, J.J., N. Drenzek, F. Marques, M. Pagels, and M. Mastalerz, 2013, Geochemical controls on shale microstructure: Geology, v. 41, p. 611-614.

Valleau, D.N., 2014, New discoveries, better recovery rates key to unconventional resources: American Oil & Gas Reporter, v. 57, no. 6, p. 46-53.

Vallejo, J.S., 2010, Prediction of lithofacies in the thinly bedded Barnett Shale, using probabilistic methods and clustering analysis through GAMLS (Geologic Analysis via Maximum Likelihood System): Norman, University of Oklahoma, unpublished M.S. thesis, 173 p.

Van Bergen, F., M. Zijp, S. Nelskamp, and H. Kombrink, 2013, Shale gas evaluation of the Early Jurassic Posidonia Shale Formation and the Carboniferous Epen Formation in the Netherlands, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 1-24.

Van de Wetering, N., H. Sanei, and B. Mayer, 2016, Organic matter characterization in mixed hydrocarbon producing areas within the Duvernay Formation, Western Canada Sedimentary Basin, Alberta: International Journal of Coal Geology, v. 156, p. 1-11.

Vanden Berg, M., 2018, Horizontal drilling in Utah: Can Utah compete with surrounding states?: Utah Geological Survey, Survey Notes, v. 50, no. 2, p. 1-3.

Van Hoorebeke, L., G. Kozera, and M. Blauch, 2010, N2 fracs prove effective in Lower Huron: American Oil & Gas Reporter, v. 53, no. 12, p. 66-70.

VanMeter, J.M., 2012, Regional mapping and reservoir analysis of the Upper Devonian shale in Pennsylvania: AAPG Search and Discovery Article #50738, 24 p. <http://www.searchanddiscovery.com/documents/2012/50738vanmeter/ndx_vanmeter.pdf>

Vanorsdale, C.R., 1987, Evaluation of Devonian shale gas reservoirs: SPE Reservoir Engineering, p. 209-216. (SPE 14446) <http://www.pe.tamu.edu/wattenbarger/public_html/Selected_papers/--Shale%20Gas/SPE14446.pdf>

Varma, A.K., B. Hazra, V.A. Mendhe, I. Chinara, and A.M. Dayal, 2015, Assessment of organic richness and hydrocarbon generation potential of Raniganj Basin shales, West Bengal, India: Marine and Petroleum Geology, v. 59, p. 480-490.

Varol, N., and İ.H. Demirel, 2020, Hydrocarbon potential of the Silurian and Carboniferous shales in the western and central Taurus region of Turkey: International Journal of Coal Geology, v. 227, 103518.

Ventura, J., 2013, Range’s path to discovery and commercialization of the Marcellus Shale — the largest producing gas field in the United States: AAPG Search and Discovery, Article No. 110165. <http://link.videoplatform.limelight.com/media/?channelId=0037b199743a432cbb7b02cb0d042a41&width=800&height=450&playerForm=22d596cc0ab348e59291dc91cc18948d&deepLink=true>

Ver Hoeve, M., C. Meyer, J. Preusser, and A. Makowitz, 2013, Basinwide delineation of gas-shale “sweet spots” using density and neutron logs: Implications for qualitative and quantitative assessment of gas-shale resources, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 151-165.

Verma, S., T. Zhao, K.J. Marfurt, and D. Devegowda, 2016, Estimation of total organic carbon and brittleness volume: Interpretation, v. 4, no. 3, p. T373-T385. (Barnett Shale)

Vermylen, J.P., 2011, Geomechanical studies of the Barnett Shale, Texas, USA: unpublished PhD thesis, Stanford University, 129 p.

Vernik, L., and J. Milovac, 2011, Rock physics of organic shales: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 318-323.

Viscomi, J., 2013, Better understanding natural fractures improves induced frac design: American Oil & Gas Reporter, v. 56, no. 12, p. 25.

Viscomi, J., 2014, Geomechanics may be the key to designing effective fracture: American Oil & Gas Reporter, v. 57, no. 8, p. 27.

Voice, P., and W.B. Harrison, III, 2019, Traverse Group reservoirs in the Michigan Basin: A second look: AAPG Search and Discovery Article #11220, 27 p. (Antrim)

Vonnet, J., 2015, Predicting sweet spots in unconventional fields: Hart Energy Publishing, E&P, v. 88, no. 9, p. 71-73.

Vulgamore, T., S. Wolhart, M. Mayerhofer, T. Clawson, and C. Pope, 2008, Hydraulic fracture diagnostics help optimize stimulations of Woodford Shale horizontals: American Oil & Gas Reporter, v. 51, no. 3, p. 66-79.

Waechter, N.B., G.L. Hampton, and J.C. Shipps, 2004, Overview of coal and shale gas measurement: field and laboratory procedures: Proceedings of 2004 International Coalbed Methane Symposium, Tuscaloosa, Alabama, University of Alabama, 17 p.

Wagman, D., 2006, Shale plays show growth prospects: Supplement to Oil & Gas Investor, January 2006, p. 14-16.

Waldo, D., 2012, A review of three North American shale plays: learnings from shale gas exploration in the Americas: AAPG Search and Discovery Article #80214, 25 p. (Barnett, Eagle Ford, Marcellus)

Walls, J., and S. Sinclair, 2011, Digital rock physics provide critical insights to characterize Eagle Ford: American Oil & Gas Reporter,v. 54, no. 2, p. 82-86, 133.

Walls, J.D., 2011, Digital rock physics provides new insight into shale reservoir quality: Hart Energy Publishing, E&P, v. 84, no. 8, p. 52-53.

Walls, J.D., and S.W. Sinclair, 2011, Eagle Ford shale reservoir properties from digital rock physics: European Association of Geoscientists and Engineers, First Break, v. 29, p. 97-101.

Walmsley, J., 2010, Shale energy: developing the Horn River — The case of remote geosteering in the Horn River Basin: World Oil, v. 231, no. 10, p. D-113.

Walser, D., 2006, Induced fracture azimuth and stimulated network size determination in West Texas Barnett and Woodford Shale wildcatting: West Texas Geological Society, v. 06-117, p. 147.

Walsh, W., C. Adams, B. Kerr, and J. Korol, 2006, Regional “shale gas” potential of the Triassic Doig and Montney Formations, northeastern British Columbia: British Columbia Ministry of Energy, Mines and Petroleum Resources, Petroleum Geology Open File 2006-02.

Walter, L.M., J.M. Budai, L.M. Abriola, C.H. Stearns, A.M. Martini, and T.C.W. Ku, 1996, Hydrogeochemistry of the Antrim Shale, northern Michigan Basin: Gas Research Institute Annual Report, GRI-95/0251, 173 p.

Walter, L.M., J.C. McIntosh, J.M. Budai, and A.M. Martini, 2000, Hydrogeochemical controls on gas occurrence and production in the New Albany Shale: GasTIPS, v. 6, no. 2, p. 14-20.

Walter, L.M., J.C. McIntosh, A.M. Martini, and J.M. Budai, 2001, Hydrogeochemistry of the New Albany Shale, Illinois Basin, phase III: Des Plaines, Illinois, Gas Technology Institute, GRI-00/0158, 58 p.

Walters, C.C., C.E. Kliewer, D.N. Awwiller, M.D. Rudnicki, Q.R. Passey, and M.W. Lin, 2014, Influence of turbostratic carbon nanostructures on electrical conductivity in shales: International Journal of Coal Geology, v. 122, p. 105-109.

Walzel, B., 2017, Argentina makes its play: Hart Energy Publishing, E&P, v.90, no. 9, p. 98-99. (Vaca Muerta)

Walzel, B., 2018, Producers set sights on Vaca Muerta: Hart Energy Publishing, E&P, v. 91, no. 4, p. 86, 88.

Walzel, B., 2018, Next frontier for unconventionals, ANS and ANWR are primed for development: Hart Energy Publishing, E&P, v. 91, no. 8, p. 88-90. (Alaska)

Walzel, B., 2018, No signs of slowing the Marcellus-Utica: Hart Energy Publishing, E&P, v. 91, no. 9, p. 106-108.

Wan, Y., S. Tang, and Z. Pan, 2017, Evaluation of the shale gas potential of the lower Silurian Longmaxi Formation in northwest Hunan Province, China: Marine and Petroleum Geology, v. 79, p. 159-175.

Wang, C., B. Zhang, Q. Hu, Z. Shu, M. Sun, and H. Bao, 2019, Laminae characteristics and influence on shale gas reservoir quality of Lower Silurian Longmaxi Formation in the Jiaoshiba area of the Sichuan Basin, China: Marine and Petroleum Geology, v. 109, p. 839-851.

Wang, F., Z. Pan, and S. Zhang, 2016, Modeling fracturing-fluid flowback behavior in hydraulically fractured shale gas under chemical potential dominated conditions: Applied Geochemistry, v. 74, p. 194-202.

Wang, F., and S. Guo, 2019, Influential factors and model of shale pore evolution: A case study of a continental shale from the Ordos Basin: Marine and Petroleum Geology, v. 102, p. 271-282.

Wang, F., and S. Guo, 2019, Shale gas content evolution in the Ordos Basin: International Journal of Coal Geology, v. 211, 103231.

Wang, F.P., and J.F.W. Gale, 2009, Screening criteria for shale-gas systems: Gulf Coast Association of Geological Societies Transactions, v. 59, p. 779-793.

Wang, F.P., and R.M. Reed, 2009, Pore networks and fluid flow in gas shales: Society of Petroleum Engineers, SPE Paper 124253, 8 p.

Wang, F.P., and U. Hammes, 2010, Shale energy: Developing the Haynesville—Effects of petrophysical factors on Haynesville fluid flow and production: World Oil, v. 231, no. 6, p. D-79 to D-82.

Wang, F.P., U. Hammes, R. Reed, T. Zhang, X. Tang, and Q. Li, 2013, Petrophysical and mechanical properties of organic-rich shales and their influences on fluid flow, in J. Chatellier and D. Jarvie, eds., Critical assessment of shale resource plays: AAPG Memoir 103, p. 167-186.

Wang, F.P., U. Hammes, and Q. Li, 2013, Overview of Haynesville Shale properties and production, in U. Hammes, and J. Gale, eds., Geology of the Haynesville Shale in east Texas and west Louisiana: AAPG Memoir 105, p. 155-177.

Wang, G., and T.R. Carr, 2013, Organic-rich Marcellus Shale lithofacies modeling and distribution pattern analysis in the Appalachian Basin: AAPG Bulletin, v. 97, p. 2173-2205.

Wang, G., Y. Ju, Z. Yan, and Q. Li, 2015, Pore structure characteristics of coal-bearing shale using fluid invasion methods: A case study in the Huainan–Huaibei coalfield in China: Marine and Petroleum Geology, v. 62, p. 1-13.

Wang, G., Y. Ju, C. Huang, S. Long, and Y. Peng, 2017, Longmaxi-Wufeng Shale lithofacies identification and 3-D modeling in the northern Fuling Gas Field, Sichuan Basin: Journal of Natural Gas Science and Engineering, v. 47, p. 59-72.

Wang, G., S. Long, Y. Ju, C. Huang, and Y. Peng, 2018, Application of horizontal wells in three-dimensional shale reservoir modeling: A case study of Longmaxi-Wufeng shale in Fuling gas field, Sichuan Basin: AAPG Bulletin, v. 102, p. 2333-2354.

Wang, G., S. Long, Y. Peng, and Y. Ju, 2020, Characteristics of organic matter particles and organic pores of shale gas reservoirs: A case study of Longmaxi-Wufeng Shale, eastern Sichuan Basin: Minerals, v. 10, no. 2, 27 p.

Wang, G., S. Long, Y. Ju, C. Huang, and Y. Peng, 2020, Application of horizontal wells in three-dimensional shale reservoir modeling: A case study of Longmaxi-Wufeng shale in Fuling gas field, Sichuan Basin: reply: AAPG Bulletin, v. 104, p. 2457-2459.

Wang, H., Z. He, Y. Zhang, H. Bao, K. Su, Z. Shu, C. Zhao, R. Wang, and T. Wang, 2019, Dissolution of marine shales and its influence on reservoir properties in the Jiaoshiba area, Sichuan Basin, China: Marine and Petroleum Geology, v. 102, p. 292-304.

Wang, H., L. Chen, Z. Qu, Y. Yin, Q. Kang, B. Yu, and W.-Q. Tao, 2020, Modeling of multi-scale transport phenomena in shale gas production — A critical review: Applied Energy, v. 262, 114575.

Wang, J., D. Dopkin, and R. Kelvin, 2012, Seismic can be relevant in shales: Hart Energy Publishing, E&P, v. 85, no. 4, p. 54-56.

Wang, J., and D. Dopkin, 2012, Shale plays can be interpreted and characterized using seismic attributes: World Oil, v. 233, no. 10, p. 67-72.

Wang, J., H. Liu, L. Wang, H. Zhang, H. Luo, and Y. Gao, 2015, Apparent permeability for gas transport in nanopores of organic shale reservoirs including multiple effects: International Journal of Coal Geology, v. 152, Part B, p. 50-62.

Wang, J., B. Wang, Y. Li, Z. Yang, H. Gong, and M. Dong, 2016, Measurement of dynamic adsorption-diffusion process of methane in shale: Fuel, v. 172, p. 37-48.

Wang, J., Q. Kang, L. Chen, and S.S. Rahman, 2017, Pore-scale lattice Boltzmann simulation of micro-gaseous flow considering surface diffusion effect: International Journal of Coal Geology, v. 169, p. 62-73.

Wang, K., B. Jiang, H. Li, Q. Liu, C. Bu, Z. Wang, and Y. Tan, 2020, Rapid and accurate evaluation of reserves in different types of shale-gas wells: Production-decline analysis: International Journal of Coal Geology, v. 218, 103359.

Wang, L., and H. Cao, 2016, Probable mechanism of organic pores evolution in shale: Case study in Dalong Formation, Lower Yangtze area, China: Journal of Natural Gas Geoscience, v. 1, p. 295-298.

Wang, M., Z. Lun, C. Zhao, H. Wang, C. Luo, X. Fu, C. Li, and D. Zhang, 2020, Influences of primary moisture on methane adsorption within Lower Silurian Longmaxi shales in the Sichuan Basin, China: Energy Fuels, v. 34, p. 10810-10824.

Wang, P., Z. Chen, X. Pang, K. Hu, M. Sun, and X. Chen, 2016, Revised models for determining TOC in shale play: Example from Devonian Duvernay Shale, Western Canada Sedimentary Basin: Marine and Petroleum Geology, v. 70, p. 304-319.

Wang, P., Z. Jiang, W. Ji, C. Zhang, Y. Yuan, L. Chen, and L. Yin, 2016, Heterogeneity of intergranular, intraparticle and organic pores in Longmaxi shale in Sichuan Basin, south China: Evidence from SEM digital images and fractal and multifractal geometries: Marine and Petroleum Geology, v. 72, p. 122-138.

Wang, P., Z. Jiang, L. Chen, L. Yin, Z. Li, C. Zhang, X. Tang, and G. Wang, 2016, Pore structure characterization for the Longmaxi and Niutitang shales in the Upper Yangtze Platform, south China: Evidence from focused ion beam—He ion microscopy, nano-computerized tomography and gas adsorption analysis: Marine and Petroleum Geology, v. 77, p. 1323-1337.

Wang, P., Z. Chen, Z. Jin, C. Jiang, M. Sun, Y. Guo, X. Chen, and Z. Jia, 2018, Shale oil and gas resources in organic pores of the Devonian Duvernay Shale, Western Canada Sedimentary Basin based on petroleum system modeling: Journal of Natural Gas Science and Engineering, v. 50, p. 33-42.

Wang, Q., X. Chen, A.N. Jha, and H. Rogers, 2014, Natural gas from shale formation–The evolution, evidences and challenges of shale gas revolution in United States: Renewable and Sustainable Energy Reviews, v. 30 p. 1-28.

Wang, Q., H. Lu, C. Shen, and J. Liao, 2015, Contribution of insoluble organic matters to late gas generation from mature Salgan Shale: Interpretation, v. 3, no. 2, p. SJ81-SJ93.

Wang, Q., and R. Li, 2016, Natural gas from shale formation: A research profile: Renewable and Sustainable Energy Reviews, v. 57, p. 1-6.

Wang, Q., H. Lu, T. Wang, D. Liu, P. Peng, X. Zhan, and X. Li, 2018, Pore characterization of Lower Silurian shale gas reservoirs in the Middle Yangtze region, central China: Marine and Petroleum Geology, v. 89, p. 14-26.

Wang, Q., T. Wang, W. Liu, J. Zhang, Q. Feng, H. Lu, and P. Peng, 2019, Relationships among composition, porosity and permeability of Longmaxi Shale reservoir in the Weiyuan Block, Sichuan Basin, China: Marine and Petroleum Geology, v. 102, p. 33-47.

Wang, Q., W. Zhou, Q. Hu, H. Xu, F. Meendsen, Y. Shu, and H. Qiao, 2021, Pore geometry characteristics and fluid-rock interaction in the Haynesville Shale, east Texas, United States: Energy Fuels, v. 35, p. 237-250.

Wang, R., Y. Gu, W. Ding, D. Gong, S. Yin, X. Wang X. Zhou, A. Li, Z. Xiao, and Z. Cui, 2016, Characteristics and dominant controlling factors of organic-rich marine shales with high thermal maturity: A case study of the Lower Cambrian Niutitang Formation in the Cen’gong block, southern Chinia: Journal of Natural Gas Science and Engineering, v. 33, p. 81-96.

Wang, S., Z. Song, T. Cao, and X. Song, 2013, The methane sorption capacity of Paleozoic shales from the Sichuan Basin, China: Marine and Petroleum Geology, v. 44, p. 112-119.

Wang, T., S. Tian, W. Zhang, W. Ren, and G. Li, 2021, Production model of a fractured horizontal well in shale gas reservoirs: Energy Fuels, v. 35, p. 493-500.

Wang, W., J. Li, M. Fan, and S. Abedi, 2017, Characterization of electrical properties of organic-rich shales at nano/micro scales: Marine and Petroleum Geology, v. 86, p. 563-572.

Wang, X., L. Zhang, C. Jiang, B. Sun, C. Gao, B. Fan, C. Guo, Y. Wan, J. Sun, and H. Hu, 2013, Lacustrine shale gas exploration in Yanchang Exploratory Block, China: AAPG Search and Discovery Article 10510, 11 p. <http://www.searchanddiscovery.com/documents/2013/10510wang/ndx_wang.pdf>

Wang, X., X. Li, X. Wang, B. Shi, X. Luo, L. Zhang, Y. Lei, C. Jiang, and Q. Meng, 2015, Carbon isotopic fractionation by desorption of shale gases: Marine and Petroleum Geology, v. 60, p. 79-86.

Wang, X., L. Zhang, C. Jiang, and B. Fan, 2015, Hydrocarbon storage space within lacustrine gas shale of the Triassic Yanchang Formation, Ordos Basin, China: Interpretation, v. 3, no. 2, p. SJ15-SJ23.

Wang, X., 2015, Practical application of liquid-CO2/slick-water hybrid fracturing technology in the lacustrine shale gas reservoir in Ordos Basin, China: Interpretation, v. 3, no. 2, p. SJ75-SJ80.

Wang, X., 2017, Characteristics of Chang 7 shale gas in the Triassic Yanchang Formation, Ordos Basin, China: Interpretation, v. 5, no. 2, p. SF31-SF39.

Wang, X., 2017, Lacustrine shale gas: Case study from the Ordos Basin: Elsevier, 358 p.

Wang, X., Y. Zhu, G.G. Lash, and Y. Wang, 2019, Multi-proxy analysis of organic matter accumulation in the Upper Ordovician-Lower Silurian black shale on the Upper Yangtze Platform, south China: Marine and Petroleum Geology, v. 103, p. 473-484.

Wang, X., Z. Jiang, K. Zhang, M. Wen, Z. Xue, W. Wu, Y. Huang, Q. Wang, X. Liu, T. Liu, and X. Xie, 2020, Analysis of gas composition and nitrogen sources of shale gas reservoir under strong tectonic events: Evidence from the Complex Tectonic Area in the Yangtze Plate: Energies, v. 13, 281, 17 p.

Wang, X., Z. Jiang, S. Jiang, J. Chang, X. Li, X. Wang, and L. Zhu, 2020, Pore evolution and formation mechanism of organic-rich shales in the whole process of hydrocarbon generation: Study of artificial and natural shale samples: Energy & Fuels, v. 34, p. 332-347.

Wang, Y., Y. Zhu, S. Liu, and R. Zhang, 2016, Methane adsorption measurements and modeling for organic-rich marine shale samples: Fuel, v. 172, p. 301-309.

Wang, Y., Y. Zhu, S. Liu, and R. Zhang, 2016, Pore characterization and its impact on methane adsorption capacity for organic-rich marine shales: Fuel, v. 181, p. 227-237.

Wang, Y., J. Huang, X. Li, D. Dong, S. Wang, and Q. Guan, 2015, Quantitative characterization of fractures and pores in shale beds of the Lower Silurian, Longmaxi Formation, Sichuan Basin: Natural Gas Industry B, v. 2, p. 481-488.

Wang, Y., S. Zhang, and G. Yuce, 2018, Gas geochemistry: From conventional to unconventional: Marine and Petroleum Geology, v. 89, part 1, p. 1-3. (special issue)

Wang, Y., X. Li, D. Dong, C. Zhang, and S. Wang, 2017, Major controlling factors for the high-quality shale of Wufeng-Longmaxi Formation, Sichuan Basin: Energy Exploration & Exploitation, v. 35, p. 444-462.

Wang, Y., Y. Qin, R. Zhang, L. He, L.M. Anovitz, M. Bleuel, D.F.R. Mildner, S. Liu, and Y. Zhu, 2018, Evaluation of nanoscale accessible pore structures for improved prediction of gas production potential in Chinese marine shales: Energy & Fuels, v. 32, p. 12447-12461.

Wang, Y., N. Qiu, T. Borjigin, B. Shen, X. Xie, Z. Ma, C. Lu, Y. Yang, L. Yang, L. Cheng, G. Fang, and Y. Cui, 2019, Integrated assessment of thermal maturity of the Upper Ordovician-Lower Silurian Wufeng-Longmaxi shale in Sichuan Basin, China: Marine and Petroleum Geology, v. 100, p. 447-465.

Wang, Y., S. Xu, F. Hao, Y. Lu, Z. Shu, D. Yan, and Y. Lu, 2019, Geochemical and petrographic characteristics of Wufeng-Longmaxi shales, Jiaoshiba area, southwest China: Implications for organic matter differential accumulation: Marine and Petroleum Geology, v. 102, p. 138-154.

Wang, Y., S. Xu, F. Hao, B. Zhang, Z. Shu, Q. Gou, Y. Lu, and F. Cong, 2020, Multiscale petrographic heterogeneity and their implications for the nanoporous system of the Wufeng-Longmaxi shales in Jiaoshiba area, southeast China: Response to depositional-diagenetic process: Geological Society of America Bulletin, v. 132, p. 1704-1721.

Wang, Y., X. Liang, J. Zhang, Z. Chen, and J. Yang, 2020, Depositional controls on mineral assemblage and organic matter accumulation of upper Ordovician-lower Silurian mudstones in northwestern Guizhou area, China: International Journal of Coal Geology, v. 231, 103611.

Warner, N.R., T.M. Kresse, P.D. Hays, A. Down, J.D. Karr, R.B. Jackson, and A. Vengosh, 2013, Geochemical and isotopic variations in shallow groundwater in areas of the Fayetteville Shale development, north-central Arkansas: Applied Geochemistry, v. 35, p. 207-220.

Warpinski, N., 2009, Microseismic monitoring emerges in step with rise of unconventional plays: American Oil & Gas Reporter, v. 52, no. 1, p. 101-107.

Warren, M., 2011, Eagle Ford Shale: south Texas heats up: Houston, Hart Energy Publishing, Eagle Ford Shale 2011 Playbook, p. 92-101.

Warren, M., and P.M. Nysveen, 2011, North American Shales: the shale revolution marches on: Oil and Gas Investor, v. 31, no. 10, p. 81-84.

Warren, M., 2011, Shales and global markets: Oil and Gas Investor, v. 31, no. 11, p. 21.

Warren, M., 2012, China revs up shales: Oil and Gas Investor, v. 32, no. 6, p. 19.

Warren, M., 2012, The Utica Shale: competing with the big boys, in Utica Shale: the playbook—with Marcellus Shale updates: Houston, Hart Energy Publishing, p. 86-92.

Warren, M., 2013, Early days for global unconventional economics, in Global unconventional yearbook: Houston, Hart Energy Publishing, p. 188-199.

Warren, M., 2014, Continued growth for North American unconventionals, in 2014 US Unconventional yearbook: Houston, Hart Energy Publishing, p. 174-179.

Washburn, K.E., 2015, Rapid geochemical and mineralogical characterization of shale by laser-induced breakdown spectroscopy: Organic Geochemistry, v. 83-84, p. 114-117.

Watkins, E., 2010, Marcellus shale fight continues in New York: Oil & Gas Journal, v. 108.3, p. 29-30.

Watkins, E., 2010, Shale gas battle looms in Europe: Oil & Gas Journal, v. 108.10, p. 32.

Watkins, E., 2010, Pennsylvania orders EOG to halt Marcellus shale drilling: Oil & Gas Journal, v. 108.22, p. 30-31.

Weeden, S., 2012, Hydraulic fracturing cracks formations code worldwide, in Hydraulic fracturing: the techbook: Houston, Hart Energy Publishing, p. 2-10.

Weeden, S., 2013, Australian unconventional plays remain in proof-of-concept stage: Hart Energy Publishing, E&P, v. 86, no. 4, p. 116-128.

Weeden, S., 2013, China’s shale gas lags far behind CBM, tight gas development: Hart Energy Publishing, E&P, v. 86, no. 10, p. 102.

Weeden, S., 2014, California drought could leave Monterey shale high and dry: Hart Energy Publishing, E&P, v. 87, no. 3, p. 25.

Weeden, S., 2014, Australia pushes boundaries on shale development: Hart Energy Publishing, E&P, v. 87, no. 7, p. 38, 40, 43.

Weeden, S., 2014, North American lessons in unconventionals apply worldwide: Hart Energy Publishing, E&P, v. 87, no. 10, p. 12-16.

Weeden, S., 2014, Momentum builds for Australia’s unconventional plays: Hart Energy Publishing, E&P, v. 87, no. 10, p. 136-139.

Weeden, S., 2015, Argentina goes against the grain by increasing spending: Hart Energy Publishing, E&P, v. 88, no. 8, p. 92-93. (Vaca Muerta Shale)

Weeden, S., 2017, Rig count, oil price hit bottom in 2016, slow rebound in activity, in Unconventional yearbook: Efficiency through technology: Houston, Hart Energy Publishing, p. 14-47.

Weghorn, S.J., 2010, Add value to any frac: Hart Energy Publishing, E&P, v. 83, no. 2, p. 65-67.

Wei, L., M. Mastalerz, A. Schimmelmann, and Y. Chen, 2014, Influence of Soxhlet-extractable bitumen and oil on porosity in thermally maturing organic-rich shales: International Journal of Coal Geology, v. 132, p. 38-50.

Wei, L., A. Schimmelmann, and M. Mastalerz, 2017, Catalytic generation of methane at 60 to 100ºC and 0.1 to 300 MPa from source rocks containing kerogen types I, II, and III: Unconventional Resources Technology Conference, URTeC 2695928, 12 p. <http://archives.datapages.com/data/urtec/2017/2695928.html>

Wei, M., Y. Xiong, L. Zhang, J. Li, and P. Peng, 2016, The effect of sample particle size on the determination of pore structure parameters in shales: International Journal of Coal Geology, v. 163, p. 177-185.

Wei, M., L. Zhang, Y. Xiong, and P. Peng, 2019, Main factors influencing the development of nanopores in over-mature, organic-rich shales: International Journal of Coal Geology, v. 212, 103233.

Wei, S., S. He, Z. Pan, X. Guo, R. Yang, T. Dong, W. Yang, and J. Gao, 2019, Models of shale gas storage capacity during burial and uplift: Application to Wufeng-Longmaxi shales in the Fuling shale gas field: Marine and Petroleum Geology, v. 109, p. 233-244.

Wei, X., T. Guo, and R. Liu, 2016, Geochemical features and genesis of shale gas in the Jiaoshiba Block of Fuling Shale Gas Field, Chongqing, China: Journal of Natural Gas Geoscience, v.1, p. 361-371.

Wei, Z., Y. Wang, G. Wang, Z. Sen, and L. Xu, 2017, Pore characterization of organic-rich Late Permian Da-long Formation shale in the Sichuan Basin, southwestern China: Fuel, v. 211, p. 507-516.

Weidner, B., 2011, Black rocks grow at Black Rock: Oil and Gas Investor, v. 31, no. 5, p. 89-90.

Weijermars, R., 2013, Barnett at DFW provides lessons on shale gas projects at US airports: Oil & Gas Journal, v. 111.8, p. 46-54.

Weijermars, R., and A. Khanal, 2019, Elementary pore network models based on Complex Analysis Methods (CAM): Fundamental insights for shale field development: Energies, v. 12, 39 p.

Weiland, R.H., and N.A. Hatcher, 2012, Approach uses tray design to optimize treating shale gas containing H2S and CO2: American Oil & Gas Reporter, v. 55, no. 3, p. 106-113.

Weis, G., 2009, Shale gas plays: boom or bust in 2009?: An investor’s guide to unconventional gas, A supplement to Oil and Gas Investor, p. 2-6.

Weissman, A., 2009, Shale plays are significant factors in new gas epoch: American Oil & Gas Reporter, v. 52, no. 6, p. 31.

Weissman, A.D., 2010, Emergence of gas shales profoundly transforming U.S. industry, global markets: American Oil & Gas Reporter, v. 53, no. 5, p. 64-73.

Welch, B., S. Finegan, S. Janwadkar, and C. Klotz, 2010, EM MWD technology improves performance in Fayetteville horizontals: American Oil & Gas Reporter, v. 53, no. 9, p. 90-97.

Wells, R.B., and T.A. Cognat, 2009, The Marcellus marches out: Houston, Hart Energy Publishing, Marcellus Playbook, p. 4-12.

Wendorff, M., M.J. Rospondek, B. Kluska, and L. Marynowski, 2017, Organic matter maturity and hydrocarbon potential of the Lower Oligocene Menilite facies in the eastern flysch Carpathians (Tarcău and Vrancea Nappes), Romania: Applied Geochemistry, v. 78, p. 295-310.

Weng, X., 2015, Modeling of complex hydraulic fractures in naturally fractured formation: Journal of Unconventional Oil and Gas Resources, v. 9, p. 114-135.

Westeman, C., 2013, Excitement begins to build for New Albany Shale: American Oil & Gas Reporter, v. 56, no. 2, p. 134-137.

Wheaton, B., K. Haustveit, W. Deeg, J.L. Miskimins, and R.D. Barree, 2016, Fiber optic DAS/DTS data delineate effectiveness of Eagle Ford completion: American Oil & Gas Reporter, v. 59, no. 12, p. 36-45.

Whidden, K.J., J.K. Pitman, O.N. Pearson, S.T. Paxton, S.A. Kinney, N.J. Gianoutsos, C.J. Schenk, H.M. Leathers-Miller, J.E. Birdwell, M.E. Brownfield, L.A. Burke, R.F. Dubiel, K.L. French, S.B. Gaswirth, S.S. Haines, P.A. Le, K.R. Marra, T.J. Mercier, M.E. Tennyson, and C.A. Woodall, 2018, Assessment of undiscovered oil and gas resources in the Eagle Ford Group and associated Cenomanian–Turonian strata, U.S. Gulf Coast, Texas, 2018: U.S. Geological Survey, Fact Sheet 2018-3033, 4 p. <https://pubs.er.usgs.gov/publication/fs20183033>

White, J., 2006, Shale players: an overview: Shale Gas, Supplement to Oil & Gas Investor, January 2006, p. 3-6.

White, J., and R. Read, 2007, The shale shaker: An Investor’s Guide to Shale Gas, Supplement to Oil & Gas Investor, January 2007, p. 2-9.

White, J., 2008, Shale plays soar: An Investor’s Guide to Unconventional Gas: Shales and Coalbed Methane, Supplement to Oil & Gas Investor, January 2008, p. 2-8.

Wickard, A.K., R.D. Elmore, and G.W. Heij, 2019, A diagenetic study of the Wolfcamp Shale in the southeast Midland Basin, west Texas: A petrographic and SEM study of two cores, in W.K. Camp, K.L. Milliken, K. Taylor, N. Fishman, P.C. Hackley, and J.H.S. Macquaker, eds., Mudstone diagenesis: Research perspectives for shale hydrocarbon reservoirs, seals, and source rocks: AAPG Memoir 120, p. 225-239.

Wicks, D.E., D. Decker, and S. Reeves, 1993, Gas shales characterization and technology development and transfer: Des Plaines, Illinois, Gas Technology Institute, Annual Report GRI-93/0002, 211 p.

Wicks, D.E., S.R. Reeves, and T.E. Hoak, 1994, Gas shales characterization and technology development and transfer, volume I: field research: Des Plaines, Illinois, Gas Technology Institute, Report GRI-94/0147.1, 74 p.

Wicks, D.E., 1994, Gas shales characterization and technology development and transfer, volume II: technology transfer: Des Plaines, Illinois, Gas Technology Institute, Final Report GRI-94/0147.2, 44 p.

Wicks, D.E., S.R. Reeves, and T.E. Hoak, 1996, Gas shales characterization and technology development and transfer. Volume I: field research: Des Plaines, Illinois, Gas Technology Institute, GRI-94/0147.1, 74 p.

Wicks, D.E., 1996, Gas shales characterization and technology development and transfer. Volume II: technology transfer: Des Plaines, Illinois, Gas Technology Institute, GRI-94/0147.2, 44 p.

Wilke, F.D.H., A. Vieth-Hillebrand, R. Naumann, J. Erzinger, and B. Horsfield, 2015, Induced mobility of inorganic and organic solutes from black shales using water extraction: Implications for shale gas exploitation: Applied Geochemistry, v. 63, p. 158-168.

Wilkins, S., V.S. Mount, K. Mahon, A. Perry, and J. Koenig, 2014, Characterization and development of subsurface fractures observed in the Marcellus Formation, Appalachian Plateau, north-central Pennsylvania: AAPG Bulletin, v. 98, p. 2301-2345.

Wilkinson, R., 2010, Amadeus Basin drilling has unconventional, conventional targets: Oil & Gas Journal, v. 108.37, p. 48-52. (Australia)

Willan, C.G., S.D. McCallum, and T.B. Warner, 2013, Utica/Point Pleasant sees new interest: American Oil & Gas Reporter, v. 56, no. 11, p. 56-60.

Willems, T., and J. DeGeare, 2014, Quest for the most efficient field-frack network: Hart Energy Publishing, E&P, v. 87, no. 7, p. 92, 94, 96, 98.

Williams, K.E., 2012, The permeability of overpressure shale seals and of source rock reservoirs is the same: AAPG Search and Discovery Article #40935, 10 p.

Williams, K.E., 2013, Source rock reservoirs are a unique petroleum system: AAPG Search and Discovery Article #41138, 5 p. <http://www.searchanddiscovery.com/documents/2013/41138williams/ndx_williams.pdf>

Williams, M., and K. Drake, 2009, Wireless system images complex shale: American Oil & Gas Reporter, v. 52, no. 7, p. 122-127.

Williams, P., 2002, The Barnett Shale: Oil and Gas Investor, v. 22, no. 3, p. 34-45.

Williams, P., 2004, A major expansion for the Barnett Shale: Oil and Gas Investor, v. 24, no. 10, p. 83.

Williams, P., 2005, Paleozoic gas shales: Oil and Gas Investor, v. 25, no. 7, p. 30-41.

Williams, P., 2006, Far west Texas: Oil and Gas Investor, v. 26, no. 1, p. 60-70.

Williams, P., 2006, New shale-gas play unfolding: Supplement to Oil & Gas Investor, January 2006, p. 18-20.

Wiliams, P., 2006, Far West Texas: operators in western West Texas are pursuing competing plays in the Barnett and Woodford Shales, in the Haley Deep area and in Old-Field Revivals: Oil & Gas Investor, v. 26, no. 1, p. 60-70.

Williams, P., 2006, Alabama hat trick: Oil and Gas Investor, v. 26, no. 3, p. 67-68. (Floyd Shale)

Williams, P., 2006, New Albany news: Oil and Gas Investor, v. 26, no. 4, p. 105.

Williams, P., 2006, Make way for shales: Oil and Gas Investor, v. 26, no. 9, p. 123.

Williams, P., 2006, Marfa Basin: Oil and Gas Investor, v. 26, no. 10, p. 71-73.

Williams, P., 2006, Appalachia: Oil and Gas Investor, v. 26, no. 11, p. 38-49.

Williams, P., 2007, Shallow DJ gas: Oil and Gas Investor, v. 27, no. 3, p. 51-54. (Niobrara chalk)

Williams, P., 2007, Alabama’s Cambrian Conasauga Shale: Oil and Gas Investor, v. 27, no. 3, p. 85.

Williams, P., 2007, Stealth shales: Oil and Gas Investor, v. 27, no. 7, p. 36-47.

Williams, P., 2007, Rockies gas: Oil and Gas Investor, v. 27, no. 8, p. 58-71.

Williams, P., 2007, Conasauga saga: a Cambrian shale play is causing all kinds of commotion in northeastern Alabama’s Valley and Ridge Province: Oil and Gas Investor, v. 27, no. 9, p. 77-80.

Williams, P., 2007, Figuring out the Floyd: Oil and Gas Investor, v. 27, no. 9, p. 115.

Williams, P., 2008, Appalachian shales: Oil and Gas Investor, v. 28, no. 6, p. 46-58.

Williams, P., 2008, Muskwa and Horn River shales: Oil and Gas Investor, v. 28, no. 6, p. 68-69.

Williams, P., 2008, Cretaceous Baxter Shale: Oil and Gas Investor, v. 28, no. 6, p. 87.

Williams, P., 2008, Shale-gas production taking off: Oil & Gas Investor, v. 28, no. 7, p. 44,47.

Williams, P., 2008, New Albany anew: the Illinois Basin’s New Albany Shale has been a tough nut to crack: Oil & Gas Investor, v. 28, no. 7, p. 73-75.

Williams, P., 2008, A vast ocean of natural gas: American Clean Skies, Summer08, p. 42-51.

Williams, P., 2008, Shale round-up offers resounding positive view: Oil and Gas Investor, v. 28, no. 8, p. 31-32.

Williams, P., 2008, Mancos Shale anticipation: Oil and Gas Investor, v. 28, no. 8, p. 131.

Williams, P., 2009, Haynesville Shale: Oil and Gas Investor, v. 29, no. 1, p. 50-61.

Williams, P., 2009, The hearty Haynesville: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 10-19.

Williams, P., 2009, Unraveling the Haynesville: Houston, Hart Energy Publishing, Haynesville Shale: the playbook, p. 20-23.

Williams, P., 2009, Retrenching and rethinking: Vision 2009 Global Energy Outlook, supplement to Oil and Gas Investor, January 2009, p. 69-74.

Williams, P., 2009, Utica Shale: Oil and Gas Investor, v. 29, no. 2, p. 55-57.

Williams, P., 2009, Horton Bluff Shale: Oil and Gas Investor, v. 29, no. 2, p. 71.

Williams, P., 2009, Haynesville hotties: Oil and Gas Investor, v. 29, no. 3, p. 87.

Williams, P., 2009, The Arkoma shales: Houston, Hart Energy Publishing, Arkoma playbook, p. 4-9.

Williams, P., 2009, Horn River shales: Oil and Gas Investor, v. 29, no. 5, p. 32-43.

Williams, P., 2009, EnCana expands Haynesville drilling, deep Bossier focus: Oil and Gas Investor, v. 29, no. 7, p. 30, 32.

Williams, P., 2009, Fly like an Eagle Ford: Oil and Gas Investor, v. 29, no. 7, p. 51-54.

Williams, P., 2009, Marcellus Shale: Oil and Gas Investor, v. 29, no. 8, p. 50-63.

Williams, P., 2009, Lower Huron horizontals: Oil and Gas Investor, v. 29, no. 8, p. 89.

Williams, P., 2009, New shale play takes flight: Hart Energy Publishing, E&P, v. 82, no. 9, p. 66-67. (Eagle Ford Shale)

Williams, P., 2009, Euro shales: Oil and Gas Investor, v. 29, no. 9, p. 57-59.

Williams, P., 2009, Shale Shangri-La: Oil and Gas Investor, v. 29, no. 10, p. 81.

Williams, P., 2009, Marcellus rock talk: Oil and Gas Investor, v. 29, no. 12, p. 69.

Williams, P., 2010, Eagle Ford: Oil and Gas Investor, v. 30, no. 3, p. 43-52.

Williams, P., 2010, Shale-gas trends; altered states: Oil and Gas Investor, v. 30, no. 5, p. 58-60.

Williams, P., and J. Stell, 2010, Midstream momentum: Oil and Gas Investor, v. 30, no. 6, p. 63-64. (Marcellus)

Williams, P., 2010, Pioneering the Eagle Ford: Hart Energy Publishing, E&P, v. 83, no. 6, p. 10-11.

Williams, P., 2010, Eagle Ford: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 4-11.

Williams, P., 2010, Fly like an Eagle Ford: Houston, Hart Energy Publishing, Eagle Ford playbook, p. 12-16.

Williams, P., 2010, Europeans puzzle over shale: Oil and Gas Investor, v. 30, no. 8, p. 97.

Williams, P., 2010, Oklahoma’s Woodford: Oil and Gas Investor, v. 30, no. 9, p. 48-61.

Williams, P., 2010, Bone Spring springs forth: Oil and Gas Investor, v. 30, no. 10, p. 77.

Williams, P., 2011, Unlocking the Utica: Oil and Gas Investor, v. 31, no. 1, p. 119.

Williams, P., 2011, Profiles in shale: Hart Energy Publishing, 2011 North American Unconventional Yearbook, supplement to Oil and Gas Investor, p. 70-135.

Williams, P., 2011, Horn River, Montney lead Canadian gas: Oil and Gas Investor, v. 31, no. 4, p. 103.

Williams, P., 2011, Barnett, Piceance/Uinta lead completions data: Oil and Gas Investor, v. 31, no. 6, p. 141.

Williams, P., 2011, Argentina’s Neuquén Basin shales: Oil and Gas Investor, v. 31, no. 7, p. 89.

Williams, P., 2011, Say hello to the Heath: Oil and Gas Investor, v. 31, no. 8, p. 117.

Williams, P., 2011, Fracing without fear: Oil and Gas Investor, v. 31, no. 11, p. 87.

Williams, P., 2011, The Haynesville can compete: Oil and Gas Investor, v. 31, no. 12, p. 75.

Williams, P., 2012, Shale-gas jobs light up economy: Oil and Gas Investor, v. 32, no. 1, p. 137.

Williams, P., 2012, The Haynesville can compete: Hart Energy Publishing, E&P, v. 85, no. 4, p. 80-83.

Williams, P., 2013, A geologic review of the top 20 global resource plays, in Global unconventional yearbook: Houston, Hart Energy Publishing, p. 2-24.

Williams-Kovacs, J.D., and C.R. Clarkson, 2014, A new tool for prospect evaluation in shale gas reservoirs: Journal of Natural Gas Science and Engineering, v. 18, p. 90-103.

Williams-Stroud, S., and P.M. Duncan, 2008, Microseismic mapping—the geological factor: Hart Energy Publishing, E&P, v. 81, no. 9, p. 51-52.

Williams-Stroud, S., 2012, Blueprint aids microseismic frac monitoring in the Marcellus Shale: Hart Energy Publishing, E&P, v. 85, no. 9, p. 58-62.

Willis, R.B., T.P. Beattie, and J.S. Fontaine, 2009, Planning critical to Marcellus success: American Oil & Gas Reporter, v. 52, no. 8, p. 161-165.

Wilson, B., 2014, Geologic and baseline groundwater evidence for naturally occurring, shallowly sourced, thermogenic gas in northeastern Pennsylvania: AAPG Bulletin, v. 98, p. 373-394.

Wilson, T.H., A.K. Hart, and P.A. Sullivan, 2014, Fractures create out-of-zone rupture: American Oil & Gas Reporter, v. 57, no. 9, p. 149-152.

Wilson, T.H., A.K. Hart, and P.A. Sullivan, 2015, Study measures Marcellus frac results: American Oil & Gas Reporter, v. 58, no. 7, p. 79-85.

Wood, D.A., and B. Hazra, 2017a, Characterization of organic-rich shales for petroleum exploration & exploitation: A review-part 1: Bulk properties, multi-scale geometry and gas adsorption: Journal of Earth Science, v. 28, p. 739-757.

Wood, D.A., and B. Hazra, 2017b, Characterization of organic-rich shales for petroleum exploration & exploitation: A review-part 2: Geochemistry, thermal maturity, isotopes and biomarkers: Journal of Earth Science, v. 28, p. 758-778.

Wood, D.A., and B. Hazra, 2017c, Characterization of organic-rich shales for petroleum exploration & exploitation: A review-part 3: Applied geomechanics, petrophysics and reservoir modeling: Journal of Earth Science, v. 28, p. 779-803.

Wood, D.A., and B. Hazra, 2018, Pyrolysis S2-peak characteristics of Raniganj shales (India) reflect complex combinations of kerogen kinetics and other processes related to different levels of thermal maturity: Advances in Geo-Energy Research, v. 2, p. 343-368.

Wood, J.M., H. Sanei, M.E. Curtis, and C.R. Clarkson, 2015, Solid bitumen as a determinant of reservoir quality in an unconventional tight gas siltstone play: International Journal of Coal Geology, v. 150-151, p. 287-295.(Montney)

Wood, J.M., H. Sanei, O. Haeri-Ardakani, M.E. Curtis, and T. Akai, 2018, Organic petrography and scanning electron microscopy imaging of a thermal maturity series from the Montney tight-gas and hydrocarbon liquids fairway: Bulletin of Canadian Petroleum Geology, v. 66, no. 2, p. 499-515.

Wood, J.M., H. Sanei, O. Haeri-Ardakani, M.E. Curtis, T. Akai, and C. Currie, 2018, Solid bitumen in the Montney Formation: Diagnostic petrographic characteristics and significance for hydrocarbon migration: International Journal of Coal Geology, v. 198, p. 48-62.

Wood, J.M., O. Haeri-Ardakani, H. Sanei, M.E. Curtis, and D. Royer, 2020, Application of paleoporosity and bitumen saturation concepts to tight-gas accumulations containing solid bitumen: International Journal of Coal Geology, v. 228, 103547. (Montney)

Wood, J.M., T. Euzen, L. Sharp, and S. Leroux, 2021, Phase separation and secondary migration of methane-rich gas accompanying uplift of an unconventional tight-hydrocarbon system, Montney Formation, western Canada: Marine and Petroleum Geology, v. 124, 104808. (2021, corrigendum, Marine and Petroleum Geology, v. 127, 104961)

Wright, B., 2014, Technology in the TMS remains a moving target, in Tuscaloosa Marine Shale playbook: Houston, Hart Energy Publishing, p. 24-30.

Wright, B., 2015, Marcellus-Utica shales: technology: Economics to the forefront in the Marcellus-Utica, in Marcellus-Utica shales playbook: Houston, Hart Energy Publishing, p. 32-41.

Wright, B., 2017, Sooner Boomer, in SCOOP/STACK: the 2017 playbook: Houston, Hart Energy Publishing, p. 24-35.

Wright, M.C., R.W. Court, F.-C.A. Kafantaris, F. Spathopoulos, and M.A. Sephton, 2015, A new rapid method for shale oil and shale gas assessment: Fuel, v. 153, p. 231-239. (pyrolysis-FTIR)

Wright, R., and P. Kulkarni, 2012, International shale resource assessment goes on, but discoveries remain elusive: World Oil, v. 233, no. 8, p. 70-82.

Wright, R., 2013, Treatment is key to effective shale water management: World Oil, v. 234, no. 7, p. S-153 to S-159.

Wright, R.L., 2012, Marcellus/Utica liquids-rich gas production tempers effects of low gas prices: World Oil, v. 233, no. 6, p. 52-62.

Wrightstone, G., 2009, Marcellus Shale — Geologic controls on production: AAPG Search and Discovery Article #10206, 10 p. <http://www.searchanddiscovery.com/pdfz/documents/2009/10206wrightstone/images/wrightstone.pdf.html>

Wrightstone, G., 2015, Little brother to the Utica and Marcellus: Hart Energy Publishing, E&P, v. 88, no. 7, p. 45, 47, 49. (Burket/Geneseo shale)

Wu, C., J. Tuo, M. Zhang, L. Sun, Y. Qian, and Y. Liu, 2016, Sedimentary and residual gas geochemical characteristics of the Lower Cambrian organic-rich shales in southeastern Chongqing, China: Marine and Petroleum Geology, v. 75, p. 140-150.

Wu, C., J. Tuo, L. Zhang, M. Zhang, J. Li, Y. Liu, and Y. Qian, 2017, Pore characteristics differences between clay-rich and clay-poor shales of the Lower Cambrian Niutitang Formation in the Northern Guizhou area, and insights into shale gas storage mechanisms: International Journal of Coal Geology, v. 178, p. 13-25.

Wu, J., C. Liang, Z. Hu, R. Yang, J. Xie, R. Wang, and J. Zhao, 2019, Sedimentation mechanisms and enrichment of organic matter in the Ordovician Wufeng Formation-Silurian Longmaxi Formation in the Sichuan Basin: Marine and Petroleum Geology, v. 101, p. 556-565.

Wu, L., Y. Lu, S. Jiang, X. Liu, Z. Liu, and Y. Lu, 2019, Relationship between the orign of organic-rich shale and geological events of the Upper Ordovician-Lower Silurian in the Upper Yangtze area: Marine and Petroleum Geology, v. 102, p. 74-85.

Wu, L., P. Wang, and A. Geng, 2019, Later stage gas generation in shale gas systems based on pyrolysis in closed and semi-closed systems: International Journal of Coal Geology, v. 206, p. 80-90.

Wu, S., Z. Yang, X. Zhai, J. Cui, L. Bai, S. Pan, and J. Cui, 2019, An experimental study of organic matter, minerals and porosity evoluation in shales within high-temperature and high-pressure constraints: Marine and Petroleum Geology, v. 102, p. 377-390.

Wu, S., X. Zhai, Z. Yang, H. Bale, Y. Hong, J. Cui, S. Pan, and S. Lin, 2019, Characterization of fracture formation in organic-rich shales – An experimental and real time study of the Permian Lucaogou Formation, Junggar Basin, northwestern China: Marine and Petroleum Geology, v. 107, p. 397-406.

Wu, W., M.D. Zoback, and A.H. Kohli, 2017, The impacts of effective stress and CO2 sorption on the matrix permeability of shale reservoir rocks: Fuel, v. 203, p. 179-186.

Wu, W., X. Shi, J. Liu, D. Li, J. Xie, S. Zhao, C. Ji, Y. Hu, and Y. Guo, 2017, Accumulation conditions and exploration potential of Wufeng-Longmaxi Formations shale gas in Wuxi area, northeastern Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 2, p. 263-271.

Wu, X., 2016, Characterize shale reservoir for engineers: AAPG Search and Discovery Article #80523, 23 p.

Wu, X., Z. Ning, R. Qi, Q. Wang, and L. Huang, 2020, Pore characterization and inner adsorption mechanism investigation for methane in organic and inorganic matters of shale: Energy & Fuels, v. 34, p. 4106-4115.

Wu, Y., L. Cheng, S. Huang, P. Jia, J. Zhang, X. Lan, and H. Huang, 2016, A practical method for production data analysis from multistage fractured horizontal wells in shale gas reservoirs: Fuel, v. 186, p. 821-829.

Wu, Y., Z. Zhang, L. Sun, Y. Li, C. He, L. Ji, L. Su, and D. Zhang, 2018, Hydrocarbon generation and potential in continental organic-rich shales at the highly-mature stage, as determined by hydrous pyrolysis under supercritical conditions: International Journal of Coal Geology, v. 187, p. 83-93.

Wu, Y., P. Tahmasebi, C. Lin, and C. Dong, 2020, Process-based and dynamic 2D modeling of shale samples: Considering the geology and pore-system evolution: International Journal of Coal Geology, v. 218, 103368.

Wu, Y., P. Tahmasebi, C. Lin, and C. Dong, 2020, A comprehensive investigation of the effects of organic-matter pores on shale properties: A multicomponent and multiscale modeling: Journal of Natural Gas Science and Engineering, v. 81, 103425.

Wüst, R.A.J., B.R. Nassichuk, and R.M. Bustin, 2013, Porosity characterization of various organic-rich shales from the Western Canadian Sedimentary Basin, Alberta and British Columbia, Canada, in W.K. Camp, E. Diaz, and B. Wawak, eds., Electron microscopy of shale hydrocarbon reservoirs: AAPG Memoir 102, p. 81-100.

Wűst, R.A.J., JCU Sees, P.C. Hackley, B.R. Nassichuk, N. Willment, and R. Brezovski, 2013, Vitrinite reflectance versus pyrolysis Tmax data: Assessing thermal maturity in shale plays with special reference to the Duvernay shale play of the western Canadian sedimentary basin, Alberta, Canada: Society of Petroleum Engineers, Paper SPE 167031, 11 p.

Wylie, A.S., Jr., and J.R. Wood, 2005, Historical production trends suggest remaining upside for E&D in Michigan: Oil & Gas Journal, v. 103.23, p. 38-46. (Devonian Antrim shale gas, p. 44)

Wylie, G., R. Hyden, V. Parkey, B. Grieser, and R. Middaugh, 2007, Unconventional gas technology—2. Custom technology makes shale resources profitable: Oil & Gas Journal, v. 105.48, p. 41-49.

Wysatta, M., 2012, Forecasting shale production: Oil and Gas Investor, v. 32, no. 1, p. 85-87.

Xi, Z., S. Tang, J. Wang, G. Yang, and L. Li, 2018, Formation and development of pore structure in marine-continental transitional shale from northern China across a maturation gradient: insights from gas adsorption and mercury intrusion: International Journal of Coal Geology, v. 200, p. 87-102.

Xi, Z., S. Tang, J. Li, Z. Zhang, and H. Xiao, 2019, Pore characterization and the controls of organic matter and quartz on pore structure: Case study of the Niutitang Formation of northern Guizhou Province, south China: Journal of Natural Gas Science and Engineering, v. 61, p. 18-31.

Xi, Z., S. Tang, S. Zhang, and Y. Ye, 2020, Factors controlling organic matter accumulation in the Wufeng-Longmaxi Formations in northwestern Hunan Province: Insights from major/trace elements and shale composition: Energy & Fuels, v. 34, p. 4139-4152.

Xia, J., Z. Song, S. Wang, and W. Zeng, 2016, Preliminary study of pore structure and methane sorption capacity of the Lower Cambrian shales from the north Gui-zhou Province: Journal of Natural Gas Science and Engineering, v. 38.

Xia, L., J. Cao, S. Hu, S. Li, and C. Shi, 2019, Organic geochemistry, petrology, and conventional and unconventional hydrocarbon resource potential of Paleogene saline source rocks in eastern China: The Biyang Sag of the Nanxiang Basin: Marine and Petroleum Geology, v. 101, p. 343-354.

Xia, X., 2014, Kinetics of gaseous hydrocarbon generation with constraints of natural gas composition from the Barnett Shale: Organic Geochemistry, v. 74, p. 143-149.

Xia, X., E. Michael, and Y. Gao, 2020, Preservation of lateral pressure disequilibrium during the uplift of shale reservoirs: AAPG Bulletin, v. 104, p. 825-843.

Xiang-Rong, Y., Y. De-Tian, W. Xiao-Song, Z. Li-Wei, Z. Bao, X. Han-Wen, G. Yin, and H. Jie, 2018, Different formation mechanism of quartz in siliceous and argillaceous shales: A case stuy of Longmaxi Formation in south China: Marine and Petroleum Geology, v. 94, p. 80-94.

Xie, L., Y. Sun, A. Jiang, F. Wang, and J. Chen, 2015, Experimental study on the gas generation proceses of lacustrine and marine shales in north China: Source implications for shale gas: Marine and Petroleum Geology, v. 67, p.204-216.

Xin, C., L. Chen, X. Guo, and C. Wang, 2019, Geochemical characteristics of shale gas in the Silurian Longmaxi Formation, Jiaoshiba area, southeast Sichuan Basin, China: Energy & Fuels, v. 33, p. 8045-8054.

Xiong, F., Z. Jiang, P. Li, X. Wang, H. Bi, Y. Li, Z. Wang, M.A. Amooie, M.R. Soltanian, and J. Moortgat, 2017, Pore structure of transitional shales in the Ordos Basin, NW China: Effects of composition on gas storage capacity: Fuel, v. 206, p. 504-515.

Xiong, F., X. Wang, M.A. Amooie, M.R. Soltanian, Z. Jiang, and J. Moortgat, 2017, The shale gas sorption capacity of transitional shales in the Ordos Basin, NW China: Fuel, v. 208, p. 236-246. [retraction notice: Fuel, 2018, v. 222, p. 870]

Xiong, F., Z. Jiang, H. Huang, M. Wen, and J. Moortgat, 2019, Mineralogy and gas content of Upper Paleozoic Shanxi and Benxi Shale Formations in the Ordos Basin: Energy & Fuels, v. 33, p. 1061-1068.

Xiong, J., X. Liu, L. Liang, and Q. Zeng, 2017, Adsorption of methane in organic-rich shale nanopores: An experimental and molecular simulation study: Fuel, v. 200, p. 299-315.

Xiong, Z., G. Wang, Y. Cao, C. Liang, M. Li, X. Shi, B. Zhang, J. Li, and Y. Fu, 2019, Controlling effect of texture on fracability in lacustrine fine-grained sedimentary rocks: Marine and Petroleum Geology, v. 101, p. 195-210.

Xu, H., D. Tang, J. Zhao, and S. Li, 2015, A precise measurement method for shale porosity with low-field nuclear magnetic resonance: A case study of the Carboniferous-Permian strata in the Linxing area, eastern Ordos Basin, China: Fuel, v. 143, p. 47-54.

Xu, H., W. Zhou, Q. Cao, C. Xiao, Q. Zhou, H. Zhang, and Y. Zhang, 2018, Differential fluid migration behavior and tectonic movement in Lower Silurian and Lower Cambrian shale gas systems in China using isotope geochemistry: Marine and Petroleum Geology, v. 89, p. 47-57.

Xu, H., W. Zhou, R. Zhang, S. Liu, and Q. Zhou, 2019, Characterizations of pore, mineral and petrographic properties of marine shale using multiple techniques and their implications on gas storage capability for Sichuan Longmaxi gas shale field in China: Fuel, v. 241, p. 360-371.

Xu, H., W. Zhou, Q. Hu, X. Xia, C. Zhang, and H. Zhang, 2019, Fluid distribution and gas adsorption behaviors in over-mature shales in southern China: Marine and Petroleum Geology, v. 109, p. 223-232.

Xu, H., 2020, Probing nanopore structure and confined fluid behavior in shale matrix: A review on small-angle neutron scattering studies: International Journal of Coal Geology, v. 117, 103325.

Xu, J., K. Wu, R. Li, Z. Li, J. Li, Q. Xu, and Z. Chen, 2018, Real gas transport in shal matrix with fractal structures: Fuel, v. 219, p. 353-363.

Xu, R., M. Prodanović, and C.J. Landry, 2019, Study of subcritical and supercritical gas adsorption behavior in different nanopore systems in shale using lattice Boltzmann method: International Journal of Coal Geology, v. 212, 103263.

Xu, R., M. Prodanović, and C. Landry, 2020, Pore scale study of gas sorption hysteresis in shale nanopores using lattice Boltzmann method: International Journal of Coal Geology, v. 229, 103568.

Xu, S., R. Liu, F. Hao, T. Engelder, J. Yi, B. Zhang, and Z. Shu, 2019, Complex rotation of maximum horizontal stress in the Wufeng-Longmaxi Shale on the eastern margin of the Sichuan Basin, China: Implications for predicting natural fractures: Marine and Petroleum Geology, v. 109, p. 519-529.

Xu, S., Q. Gou, F. Hao, B. Zhang, Z. Shu, Y. Lu, and Y. Wang, 2020, Shale pore structure characteristics of the high and low productivity wells, Jiaoshiba shale gas field, Sichuan Basin, China: Dominated by lithofacies or preservation condition? Marine and Petroleum Geology, v. 114, 104211.

Xu, S., F. Hao, Y. Zhang, and Q. Gou, 2020, High-quality marine shale reservoir prediction in the lower Silurian Longmaxi Formation, Sichuan Basin, China: Interpretation, v. 8, p. T453-T463.

Xu, Z., W. Shi, G. Zhai, N. Peng, and C. Zhang, 2020, Study on the characterization of pore structure and main controlling factors of pore development in gas shale: Journal of Natural Gas Geoscience, v. 5, p. 255-271.

Xue, C., J. Wu, L. Qiu, Y. Liu, and J. Zhong, 2020, Effect of thermal maturity on pore type and size in transitional shale reservoirs: An example from the Upper Paleozoic Shanxi Formation, Ordos Basin, China: Energy Fuels, v. 34, p. 15,736-15,751.

Yalçin, M.N., S. Inan, H. Hoşgörmez, and S. Çetin, 2003, A new Carboniferous coal/shale driven gas play in the western Black Sea region (Turkey): Marine and Petroleum Geology, v. 19, p. 1241-1256.

Yale Graduates in Energy Study Group, 2012, The arithmetic of shale gas: Oil and Gas Investor, v. 32, no. 10, p. 69-72.

Yan, C., Z. Jin, J. Zhao, W. Du, and Q. Liu, 2018, Influence of sedimentary environment on organic matter enrichment in shale: A case study of the Wufeng and Longmaxi Formations of the Sichuan Basin, China: Marine and Petroleum Geology, v. 92, p. 880-894.

Yan, J.-F., Y.-P. Men, Y.-Y. Sun, Q. Yu, W. Liu, H.-Q. Zhang, J. Liu, J.-W. Kang, S.-N. Zhang, H.-H. Bai, and X. Zheng, 2016, Geochemical and geological characteristics of the Lower Cambrian shales in the middle-upper Yangtze area of south China and their implication for the shale gas exploration: Marine and Petroleum Geology, v. 70, p. 1-13.

Yang, B., Y. Kang, X. Li, L. You, and M. Chen, 2017, An integrated method of measuring gas permeability and diffusion coefficient simultaneously via pressure decay tests in shale: International Journal of Coal Geology, v. 179, p. 1-10.

Yang, C., D. Bowman, J. Morris, and B. Zagorski, 2013, Marcellus Shale asset optimization through increased geological understanding: AAPG Search and Discovery Article #41144, 17 p. <http://www.searchanddiscovery.com/documents/2013/41144yang/ndx_yang.pdf>

Yang, C., J. Zhang, X. Tang, J. Ding, Q. Zhao, W. Dang, H. Chen, Y. Su, B. Li, and D. Lu, 2017, Comparative study on micro-pore structure of marine, terrestrial, and transitional shales in key areas, China: International Journal of Coal Geology, v. 171, p. 76-92.

Yang, C., J. Zhang, X. Wang, X. Tang, Y. Chen, L. Jiang, and X. Gong, 2017, Nanoscale pore structure and fractal characteristics of a marine-continental transitional shale: A case study from the lower Permian Shanxi Shale in the southeastern Ordos Basin, China: Marine and Petroleum Geology, v. 88, p. 54-68.

Yang, C., Y. Xiong, J. Zhang, Y. Liu, and C. Chen, 2019, Comprehensive understanding of OM-hosted pores in transicional shale: A case study of Permian Longtan Shale in south China based on organic petrographic analysis, gas adsorption, and X-ray diffraction measurements: Energy & Fuels, v. 33, p. 8055-8064.

Yang, C., Y. Xiong, J.Wang, Y. Li, and W. Jiang, 2020, Mechanical characterization of shale matrix minerals using phase-positioned nanoindentation and nano-dynamic mechanical analysis: International Journal of Coal Geology, v. 229, 103571.

Yang, F., Z. Ning, and H. Liu, 2013, Fractal characteristics of shales from a shale gas reservoir in the Sichuan Basin, China: Fuel, v. 115, p. 378-384.

Yang, F., Z. Ning, R. Zhang, H. Zhao, and B.M. Krooss, 2015, Investigations on the methane sorption capacity of merine shales from Sichuan Basin, China: International Journal of Coal Geology, v. 146, p. 104-117.

Yang, F., Z. Ning, Q. Wang, and H. Liu, 2016, Pore structure of Cambrian shales from the Sichuan Basin in China and implications to gas storage: Marine and Petroleum Geology, v. 70, p. 14-26.

Yang, F., Z. Ning, Q. Wang, R. Zhang, and B.M. Krooss, 2016, Pore structure characteristics of lower Silurian shales in the southern Sichuan Basin, China: Insights to pore development and gas storage mechanism: International Journal of Coal Geology, v. 156, p. 12-24.

Yang, F., B. Hu, S. Xu, Q. Meng, and B.M. Krooss, 2018, Thermodynamic characteristic of methane sorption on shales from oil, gas, and condensate windows: Energy & Fuels, v. 32, p. 10443-10456.

Yang, F., S. Xu, F. Hao, B. Hu, B. Zhang, Z. Shu, and S. Long, 2019, Petrophysical characteristics of shales with different lithofacies in Jiaoshiba area, Sichuan Basin, China: Implications for shale gas accumulation mechanism: Marine and Petroleum Geology, v. 109, p. 394-407.

Yang, J., J. Hatcherian, P.C. Hackley, and A.E. Pomerantz, 2017, Nanoscale geochemical and geomechanical characterization of organic matter in shale: Nature Communications, v. 8: 2179, 9 p.

Yang, R., J. Cao, G. Hu, and X. Fu, 2015, Organic geochemistry and petrology of Lower Cretaceous black shales in the Qiangtang Basin, Tibet: Implications for hydrocarbon potential: Organic Geochemistry, v. 86, p. 55-70.

Yang, R., S. He, J. Yi, and Q. Hu, 2016, Nano-scale pore structure and fractal dimension of organic-rich Wufeng-Longmaxi shale from Jiaoshiba area, Sichuan Basin: Investigations using FE-SEM, gas adsorption and helium pycnometry: Marine and Petroleum Geology, v. 70, p. 27-45.

Yang, R., S. He, Q. Hu, D. Hu, S. Zhang, and J. Yi, 2016, Pore characterization and methane sorption capacity of over-mature organic-rich Wufeng and Longmaxi shales in the southeast Sichuan Basin, China: Marine and Petroleum Geology, v. 77, p. 247-261.

Yang, R., S. He, Q. Hu, M. Sun, D. Hu, and J. Yi, 2017, Applying SANS technique to characterize nano-scale pore structure of Longmaxi shale, Sichuan Basin (China): Fuel, v. 197, p. 91-99. (Longmaxi Formation)

Yang, R., S. He, Q. Hu, D. Hu, and J. Yi, 2017, Geochemical characteristics and origin of natural gas from Wufeng-Longmaxi shales of the Fuling gas field, Sichuan Basin (China): International Journal of Coal Geology, v. 171, p. 1-11.

Yang, R., Q. Hu, S. He, F. Hao, X. Guo, J. Yi, and X. He, 2018, Pore structure, wettability and tracer migration in four leading shale formations in the Middle Yangtze Platform, China: Marine and Petroleum Geology, v. 89, p. 415-427.

Yang, R., Q. Hu, S. He, F. Hao, X. Guo, J. Yi, and M. Sun, 2019, Wettability and connectivity of overmature shales in the Fuling gas field, Sichuan Basin (China): AAPG Bulletin, v. 103, p. 653-689.

Yang, R., Q. Hu, J. Yi, B. Zhang, S. He, X. Guo, Y. Hou, and T. Dong, 2019, The effects of mineral composition, TOC content and pore structure on spontaneous imbibition in Lower Jurassic Dongyuemiao shale reservoirs: Marine and Petroleum Geology, v. 109, p. 268-278.

Yang, S., G. Chen, C. Lv, C. Li, N. Yin, F. Yang, and L. Xue, 2017, Evolution of nanopore structure in lacustrine organic-rich shales during thermal maturation from hydrous pyrolysis, Minhe Basin, northwest China: Energy Exploration & Exploitation.

Yang, S., H.-M. Schulz, B. Horsfield, N.H. Schovsbo, M. Noah, E. Panova, H. Rothe, and K. Hahne, 2018, On the changing petroleum generation properties of Alum Shale over geological time caused by uranium irradiation: Geochimica et Cosmochimica Acta, v. 229, p. 20-35.

Yang, S., H.-M. Schulz, N. Schovsbo, and S. Mayanna, 2019, The organic geochemistry of “kolm”, a unique analogue for the understanding of molecular changes after significant uranium irradiation: International Journal of Coal Geology, v. 209, p. 89-93.

Yang, T., X. Li, and D. Zhang, 2015, Quantitative dynamic analysis of gas desorption contribution to production in shale gas reservoirs: Journal of Unconventional Oil and Gas Resources, v. 9, p. 18-30.

Yang, W., S. He, G. Zhai, T. Dong, D. Gong, X. Yuan, and S. Wei, 2019, Shale-gas accumulation and pore structure characteristics in the lower Cambrian Niutitang shales, Cen-gong Block, south China: Australian Journal of Earth Sciences, v. 66, no. 2, p. 289-303.

Yang, W., R. Zuo, D. Chen, Z. Jiang, L. Guo, Z. Liu, R. Chen, Y. Zhang, Z. Zhang, Y. Song, Q. Luo, Q. Wang, J. Wang, L. Chen, Y. Li, and C. Zhang, 2019, Climate and tectonic-driven deposition of sandwiched continental shale units: New insights from petrology, geochemistry, and integrated provenance analyses (the western Sichuan subsiding basin, southwest China): International Journal of Coal Geology, v. 211, 103227.

Yang, X.-G., and S.-B. Guo, 2020, Porosity model and pore evolution of transitional shales: an example from the southern North China Basin: Petroleum Science.

Yang, Y., and A.C. Aplin, 2010, A permeability-porosity relationship for mudstones: Marine and Petroleum Geology, v. 27, p. 1692-1697.

Yang, Y., and F. Bao, 2017, Characteristics of shale nanopore system and its internal gas flow: A case study of the lower Silurian Longmaxi Formation shale from Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 2, p. 303-311.

Yang, Y., and S. Liu, 2020, Review of shale gas sorption and its models: Energy Fuels, v. 34, p. 15,502-15,524.

Yang, Z., W. Wang, M. Dong, J. Wang, Y. Li, H. Gong, and Q. Sang, 2016, A model of dynamic adsorption — diffusion for modeling gas transport and storage in shale: Fuel, v. 173, p. 115-128.

Yao, Y., J. Liu, D. Liu, J. Chen, and Z. Pan, 2019, A new application of NMR in characterization of multiphase methane and adsorption capacity of shale: International Journal of Coal Geology, v. 201, p. 76-85.

Yassin, M.R., M. Begum, and H. Dehghanpour, 2017, Organic shale wettability and its relationship to other petrophysical properties: A Duvernay case study: International Journal of Coal Geology, v. 169, p. 74-91.

Yi, J., H. Bao, A. Zheng, B. Zhang, Z. Shu, J. Li, and C. Wang, 2019, Main factors controlling marine shale gas enrichment and high-yield wells in South China: A case study of the Fuling shale gas field: Marine and Petroleum Geology, v. 103, p. 114-125.

Yin, M., H. Huang, and J. Ma, 2016, Pore size constrains on hydrocarbon biodegradation in shales from the Second White Speckled Shale Formation of the Western Canada Sedimentary Basin: Fuel, v. 185, p. 639-648.

Yin, Y., Z.G. Gu, and J.F. Zhang, 2017, An analytical model for shale gas transport in kerogen nanopores coupled with real gas effect and surface diffusion: Fuel, v. 210, p. 569-577.

Yin, Z., Y.Z. Ma, E. Gomez, and S. Li, 2020, Application of horizontal wells in three-dimensional shale reservoir modeling: A case study of Longmaxi-Wufeng shale in Fuling gas field, Sichuan Basin: discussion: AAPG Bulletin, v. 104, p. 2453-2456.

Yingjie, L., L. Xiaoyuan, W. Yuelong, and Y. Qingchun, 2015, Effects of composition and pore structure on the reservoir gas capacity of Carboniferous shale from Qaidam Basin, China: Marine and Petroleum Geology, v. 62, p. 44-57.

Yost, C., 2010, US gas market well-supplied: LNG or shale gas?: Oil & Gas Journal, v. 108.10, p. 46-50.

Yoxtheimer, D., 2014, Water management crucial in Marcellus: American Oil & Gas Reporter, v. 57, no. 13, p. 120-124.

Yu, H., Z. Wang, R. Rezaee, Y. Su, W. Tan, Y. Yuan, Y. Zhang, L. Xiao, and X. Liu, 2017, Applications of nuclear magnetic resonance (NMR) logs in shale gas reservoirs for pore size distribution evaluation: Unconventional Resources Technology Conference, URTeC 2663389, 9 p. <http://archives.datapages.com/data/urtec/2017/2663389.html>

Yu, H., R. Rezaee, Z. Wang, T. Han, Y. Zhang, M. Arif, and L. Johnson, 2017, A new method for TOC estimation in tight shale gas reservoirs: International Journal of Coal Geology, v. 179, p. 269-277.

Yu, K., C. Shao, Y. Ju, and Z. Qu, 2019, The genesis and controlling factors of micropore volume in transitional coal-bearing shale reservoirs under different sedimentary environments: Marine and Petroleum Geology, v. 102, p. 426-438.

Yu, K., Y. Ju, Y. Qi, C. Huang, and H. Zhu, 2020, Geological process of Late Paleozoic shale gas generation in the eastern Ordos Basin, China: Revelations from geochemistry and basin modeling: International Journal of Coal Geology, v. 229, 103569.

Yu, R., Y. Bian, Y. Qi, J. Zhang, J. Zhang, X. Zhang, W. Guo, J. Yan, and M. Wang, 2017, Qualitative modeling of multi-stage fractured horizontal well productivity in shale gas reservoir: Energy Exploration & Exploitation, v. 35, p. 516-527.

Yu, Y., X. Luo, Y. Lei, X. Wang, L. Zhang, C. Jiang, W. Yang, M. Cheng, and L. Zhang, 2016, Characterization of lacustrine shale pore structure: The Upper-Triassic Yanchang Formation, Ordos Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 299-308.

Yuan, B., D. Zheng, R.G. Moghanloo, and K. Wang, 2017, A novel integrated workflow for evaluation, optimization, and production predication in shale plays: International Journal of Coal Geology, v. 180, p. 18-28.

Yuan, B., and D.A. Wood, 2018, A holistic review of geosystem damage during unconventional oil, gas and geothermal energy recovery: Fuel, v. 227, p. 99-110.

Yuan, Q., Y. Mehmani, A.K. Burnham, A. Lapene, J. Wendebourg, and H.A. Tchelepi, 2020, Scaling analysis of coupled compaction, kerogen conversion, and petroleum expulsion during geological maturation: Journal of Peroleum Science and Engineering, v. 192, 107285.

Yuan, W., Z. Pan, X. Li, Y. Yang, C. Zhao, L.D. Connell, S. Li, and J. He, 2013, Experimental study and modelling of methane adsorption and diffusion in shale: Fuel, v. 117, p. 509-519.

Yuan, Y., R. Rezaee, M. Verrall, S.-Y. Hu, J. Zou, and N. Testmanti, 2018, Pore characterization and clay bound water assessment in shale with a combination of NMR and low-pressure nitrogen gas adsorption: International Journal of Coal Geology, v. 194, p. 11-21.

Yuan, Y., and R. Rezaee, 2019, Comparative porosity and pore structure assessment in shales: Measurement techniques, influencing factors and implications for reservoir characterization: Energies, v. 12(11):2094, 14 p.

Yudhowijoyo, A., R. Rafati, A.S. Haddad, M.S. Raja, and H. Hamidi, 2018, Subsurface methane leakage in unconventional shale gas reservoirs: A review of leakage pathways and current sealing techniques: Journal of Natural Gas Science and Engineering, v. 54, p. 309-319.

Yuqiang, J., Z. Qichen, Z. Hu, G. Hui, L. Mingsheng, and H. Yongbin, 2015, Gas-prospective area optimization for Silurian shale gas of Longmaxi Formation in southern Sichuan Basin, China: Interpretation, v. 3, no. 2, p. SJ49-SJ59.

Yurchenko, I.A., J.M. Moldowan, K.E. Peters, L.B. Magoon, and S.A. Graham, 2018, Source rock heterogeneity and migrated hydrocarbons in the Triassic Shublik Formation and their implication for unconventional resource evaluation in Arctic Alaska: Marine and Petroleum Geology, v. 92, p. 932-952.

Zagorski, W.A., M. Emery, and D.C. Bowman, 2011, Factors control Marcellus productivity: American Oil & Gas Reporter, v. 54, no. 8, p. 172-180. (Marcellus isopach map)

Zagorski, W.A., D.C. Bowman, M. Emery, and G.R. Wrightstone, 2011, An overview of some key factors controlling well productivity in core areas of the Appalachian Basin Marcellus Shale play: AAPG Search and Discovery Article #110147, 24 p. <http://www.searchanddiscovery.com/documents/2011/110147zagorski/ndx_zagorski.pdf>

Zagorski, W.A., G.R. Wrightstone, and D.C. Bowman, 2012, The Appalachian Basin Marcellus gas play: Its history of development, geologic controls on production, and future potential as a world-class reservoir, in J.A. Breyer, ed., Shale reservoirs—Giant resources for the 21st century: AAPG Memoir 97, p. 172-200.

Zagorski, W.A., M. Emery, and J.L. Ventura, 2017, The Marcellus Shale play: Its discovery and emergence as a major global hydrocarbon accumulation, in R.K. Merrill and C.A. Sternbach, eds., Giant fields of the decade 2000-2010: AAPG Memoir 113, p. 55-90.

Zangeneh, N., E. Eberhardt, and R.M. Bustin, 2015, Investigation of the influence of stress shadows on horizontal hydraulic fractures from adjacent lateral wells: Journal of Unconventional Oil and Gas Resources, v. 9, p. 54-64.

Zborowski, M., 2016, US shale gas-advantaged projects strain toward finish line: Oil & Gas Journal, v. 114.11, p. 22-30.

Zdanaviciute, O., and J. Lazauskiene, 2009, Organic matter of Early Silurian succession – the potential source of unconventional gas in the Baltic Basin (Lithuanian): Baltica, v. 22, p. 89-99.

Zelinski, R.E., and R.D. McIver, 1982, Resource and exploration assessment of the oil and gas potential in the Devonian shales of the Appalachian Basin: U.S. Department of Energy Morgantown Energy Technology Center MLM-MU-82-61-0002, DOE/DP/0053-1125, 326 p.

Zendehboudi, S., and A. Bahadori, 2016, Shale oil and gas handbook: Theory, technologies, and challenges: Elsevier Science & Technology.

Zeng, L., W. Lyu, J. Li, L. Zhu, J. Weng, F. Yue, and K. Zu, 2016, Natural fractures and their influence on shale gas enrichment in Sichuan Basin, China: Journal of Natural Gas Science and Engineering, v. 30, p. 1-9.

Zeng, Q., Y. Wu, Y. Liu, and G. Zhang, 2019, Determining the micro-fracture properties of Antrim gas shale by an improved micro-indentation method: Journal of Natural Gas Science and Engineering, v. 62, p. 224-235.

Zhai, G., Y Wang, G. Liu, Z. Zhou, S. Bao, K. Chen, H. Kang, J. Zhang, S. Wang, and Y. Zhang, 2019, The Sinian-Cambrian Formation shale gas exploration and practice in southern margin of Huangling paleo-uplift: Marine and Petroleum Geology, v. 109, p. 419-433.

Zhai, G., J. Li, Y. Jiao, Y. Wang, G. Liu, Q. Xu, C. Wang, R. Chen, and X. Guo, 2019, Applications of chemostratigraphy in a characterization of shale gas sedimentary microfacies and predictions of sweet spots—taking the Cambrian black shales in western Hubei as an example: Marine and Petroleum Geology, v. 109, p. 547-560.

Zhang, C., D. Dong, Y. Wang, and Q. Guan, 2017, Brittleness evaluation of the Upper Ordovician Wufeng-Lower Silurian Longmaxi shale in southern Sichuan Basin, China: Energy Exploration & Exploitation, v. 35, p. 430-443.

Zhang, C., and Q. Yu, 2019, Breakthrough pressure and permeability in partially water-saturated shales using methane–carbon dioxide gas mixtures: An experimental study of Carboniferous shales from the eastern Qaidam Basin, China: AAPG Bulletin, v. 103, p. 273-301.

Zhang, C.-Y., X.-S. Chai, and X.-M. Xiao, 2015, A simple method for correcting for the presence of minor gases when determining the adsorbed methane content in shale: Fuel, v. 150, p. 334-338.

Zhang, D., P.G. Ranjith, M.S.A. Perera, and G. Ma, 2020, Laboratory evaluation of flow properties of Niutitang shale at reservoir conditions: Marine and Petroleum Geology, v. 115, 104257.

Zhang, F., and H. Emami-Meybodi, 2020, Multiphase flowback rate-transient analysis of shale gas reservoirs: International Journal of Coal Geology, v. 217, 103315.

Zhang, J., A. Kamenov, D. Zhu, and A.D. Hill, 2015, Measurement of realistic fracture conductivity in the Barnett Shale: Journal of Unconventional Oil and Gas Resources, v. 11, p. 44-52.

Zhang, J., X. Li, Q. Wei, W. Gao, W. Liang, Z. Wang, and F. Wang, 2017, Quantitative characterization of pore-fracture system of organic-rich marine-continental shale reservoirs: A case study of the Upper Permian Longtan Formation, southern Sichuan Basin, China: Fuel, v. 200, p. 272-281.

Zhang, J., X. Li, X. Zhang, M. Zhang, G. Cong, G. Zhang, and F. Wang, 2018, Geochemical and geological characterization of marine-continental transitional shales from Longtan Formation in Yangtze area, South China: Marine and Petroleum Geology, v. 96, p. 1-15.

Zhang, J.., X. Li, Z. Xiaoyan, G. Zhao, B. Zhou, J. Li, Z. Xie, and F. Wang, 2019, Characterization of the full-sized pore structure of coal-bearing shales and its effect on shale gas content: Energy & Fuels, v. 33, p. 1969-1982.

Zhang, J., Z. Jiang, S. Wang, R. Wang, Y. Zhang, and W. Du, 2021, Bedding-parallel calcite veins as a proxy for shale reservoir quality: Marine and Petroleum Geology, v. 127, 104975.

Zhang, K., Z. Jiang, L. Yin, Z. Gao, P. Wang, Y. Song, C. Jia, W. Liu, T. Liu, X. Xie, and Y. Li, 2017, Controlling functions of hydrothermal activity to shale gas content-taking lower Cambrian in Xiuwu Basin as an example: Marine and Petroleum Geology, v. 85, p. 177-193.

Zhang, K., Y. Song, S. Jiang, Z. Jiang, C. Jia, Y. Huang, M. Wen, W. Liu, X. Xie, T. Liu, P. Wang, C. Shan, and Y. Wu, 2019, Mechanism analysis of organic matter enrichment in different sedimentary backgrounds: A case study of the Lower Cambrian and the Upper Ordovician-Lower Silurian, in Yangtze region: Marine and Petroleum Geology, v. 99, p. 488-497.

Zhang, K., Y. Song, S. Jiang, Z. Jiang, C. Jia, Y. Huang, X. Liu, M. Wen, X. Wang, X. Li, P. Wang, C. Shan, T. Liu, W. Liu, and X. Xie, 2019, Shale gas accumulation mechanism in a syncline setting based on multiple geological factors: An example of southern Sichuan and the Xiuwu Basin in the Yangtze region: Fuel, v. 241, p. 468-476.

Zhang, L., D. Li, and D. Lu, 2015, Effect of distinguishing apparent permeability for different components on BHP and produced gas composition in tight- and shale-gas reservoir: Journal of Unconventional Oil and Gas Resources, v. 11, p. 53-59.

Zhang, L., Y. Xiong, Y. Li, M. Wei, W. Jiang, R. Lei, and Z. Wu, 2017, DFT modeling of CO2 and Ar low-pressure adsorption for accurate nanopore structure characterization in organic-rich shales: Fuel, v. 204, p. 1-11.

Zhang, L., B. Li, S. Jiang, D. Xiao, S. Lu, Y. Zhang, C. Gong, and L. Chen, 2018, Heterogeneity characterization of the lower Silurian Longmaxi marine shale in the Pengshui area, South China: International Journal of Coal Geology, v. 195, p. 250-266.

Zhang, L., D. Xiao, S. Lu, S. Jiang, and S. Lu, 2019, Effect of sedimentary environment on the formation of organic-rich marine shale: Insights from major/trace elements and shale composition: International Journal of Coal Geology, v. 204, p. 34-50.

Zhang, L., Z. Chen, and Y.-L. Zhao, eds., 2019, Well production performance analysis for shale gas reservoirs: Elsevier, Developments in petroleum science, v. 66, 374 p.

Zhang, L., D. Xiao, S. Lu, S. Jiang, L. Chen, T. Guo, and L. Wu, 2020, Pore development of the Lower Longmaxi shale in the southeastern Sichuan Basin and its adjacent areas: Insights from lithofacies identification and organic matter: Marine and Petroleum Geology, v. 122, 104662.

Zhang, M., Q. Tang, C. Cao, Z. Lv, T. Zhang, D. Zhang, Z. Li, and L. Du, 2018, Molecular and carbon isotopic variation in 3.5 years shale gas production from Longmaxi Formation in Sichuan Basin, China: Marine and Petroleum Geology, v. 89, p. 27-37.

Zhang, P., S. Lu, J. Li, H. Xue, W. Li, and P. Zhang, 2017, Characterization of shale pore system: A case study of Paleogene Xin’gouzui Formation in the Jianghan Basin, China: Marine and Petroleum Geology, v. 79, p. 321-334.

Zhang, Q., R. Liu, Z. Pang, W. Lin, W. Bai, and H. Wang, 2016, Characterization of microscopic pore structures in Lower Silurian black shale(S11), southeastern Chongqing, China: Marine and Petroleum Geology, v. 71, p. 250-259. (Longmaxi shale)

Zhang, Q., R. Littke, L. Zieger, M. Shabani, X. Tang, and J. Zhang, 2019, Ediacaran, Cambrian, Ordovician, Silurian and Permian shales of the Upper Yangtze Platform, south China: Deposition, thermal maturity and shale gas potential: International Journal of Coal Geology, v. 216, 103281.

Zhang, Q., S. Grohmann, X. Xu, and R. Littke, 2020, Depositional environment and thermal maturity of the coal-bearing Longtan Shale in southwest Guizhou, China: Implications for shale gas resource potential: International Journal of Coal Geology, v. 231, 103607.

Zhang, R., G. Li, Z. Zhao, and H. Zhang, 2017, Fracture conductivity optimized in China’s Longmaxi shale: Oil & Gas Journal, v. 115.8, p. 44-48.

Zhang, R., S. Liu, L. He, T.P. Blach, and Y. Wang, 2020, Characterizing anisotropic pore structure and its impact on gas storage and transport in coalbed methane and shale gas reservoirs: Energy & Fuels, v. 34, p. 3161-3172.

Zhang, S., J. Yan, Q. Hu, J. Wang, T. Tian, J. Chao, and M. Wang, 2019, Integrated NMR and FE-SEM methods for pore structure characterization of Shahejie shale from the Dongying Depression, Bohai Bay Basin: Marine and Petroleum Geology, v. 100, p. 85-94.

Zhang, T., G.S. Ellis, S.C. Ruppel, K. Milliken, and R. Yang, 2012, Effect of organic-matter type and thermal maturity on methane adsorption in shale-gas systems: Organic Geochemistry, v. 47, p. 120-131.

Zhang, T., S.C. Ruppel, K. Milliken, and R. Yang, 2012, Experimental gas extraction by rock crushing: Evidence for preservation of methane in core samples from the mudstones of the Eagle Ford Formation and Barnett Shales: AAPG Search and Discovery Article #40807, 30 p.

Zhang, T., X. Sun, K.L. Milliken, S.C. Ruppel, and D. Enriquez, 2017, Empirical relationship between gas composition and thermal maturity in Eagle Ford Shale, south Texas: AAPG Bulletin, v. 101, p. 1277-1307.

Zhang, T., Y. He, Y. Yang, and K. Wu, 2017, Molecular simulation of shale gas adsorption in organic-matter nanopore: Journal of Natural Gas Geoscience, v. 2, p. 323-332.

Zhang, T., and S. Sun, 2019, A coupled Lattice Boltzmann approach to simulate gas flow and transport in shale reservoirs with dynamic sorption: Fuel, v. 246, p. 196-203.

Zhang, T., S. Hu, Q. Bu, B. Bai, S. Tao, Y. Chen, Z. Pan, S. Lin, Z. Pang, W. Xu, M. Yuan, J. Fan, Y. Sun, and X. Feng, 2021, Effects of lacustrine depositional sequences on organic matter enrichment in the Chang 7 shale, Ordos Basin, China: Marine and Petroleum Geology, v. 124, 104778.

Zhang, W., Q. Wang, J. Ye, and J. Zhou, 2017, Fracture development and fluid pathways in shales during granite intrusion: International Journal of Coal Geology, v. 183, p. 25-37.

Zhang, W., and Q. Wang, 2018, Permeability anisotropy and gas slippage of shales from the Sichuan Basin in South China: International Journal of Coal Geology, v. 194, p. 22-32.

Zhang, W., W. Hu, T. Borjigin, and F. Zhu, 2020, Pore characteristics of different organic matter in black shale: A case study of the Wufeng-Longmaxi Formation in the southeast Sichuan Basin, China: Marine and Petroleum Geology, v. 111, p. 33-43.

Zhang, X., C. Liu, Y. Zhu, S. Chen, Y. Wang, and C. Fu, 2015, The characterization of a marine shale gas reservoir in the lower Silurian Longmaxi Formation of the northeastern Yunnan Province, China: Journal of Natural Gas Science and Engineering, v. 27, part 1, p. 321-335.

Zhang, X., Y. Lu, J. Tang, Z. Zhou, and Y. Liao, 2016, Experimental study on fracture initiation and propagation in shale using supercritical carbon dioxide fracturing: Fuel, v. 190, p. 370-378.

Zhang, X., W. Shi, Q. Hu, G. Zhai, R. Wang, X. Xu, Z. Xu, F. Meng, and Y. Liu, 2019, Pressure-dependent fracture permeability of marine shales in the northeast Yunnan area, southern China: International Journal of Coal Geology, v. 214, 103237.

Zhang, Y., D. Shao, J. Yan, X. Jia, Y. Li, P. Yu, and T. Zhang, 2016, The pore size distribution and its relationship with shale gas capacity in organic-rich mudstone of Wufeng-Longmaxi Formations, Sichuan Basin, China: Journal of Natural Gas Geoscience, v. 1, p. 213-220.

Zhang, Y., Z. He, S. Jiang, S. Lu, D. Xiao, G. Chen, and Y. Li, 2019, Fracture types in the lower Cambrian shale and their effect on shale gas accumulation, Upper Yangtze: Marine and Petroleum Geology, v. 99, p. 282-291.

Zhang, Y., Z. He, S. Lu, S. Jiang, D. Xiao, S. Long, B. Gao, W. Du, J. Zhao, G. Chen, and Y. Li, 2020, Characteristics of microorganisims and origin of organic matter in Wufeng Formation and Longmaxi Formation in Sichuan Basin, south China: Marine and Petroleum Geology, v. 111, p. 363-374.

Zhang, Y., Y.Z. Ma, and E. Gomez, 2020, Comment on “Correlation analysis of element contents and mechanical characteristics of shale reservoirs” by Liu et al. (2018): Marine and Petroleum Geology, v. 116, 103865.

Zhang, Y., Y. Li, W. Guo, Y. Li, and H. Dang, 2020, Differential evolution and the influencing factors of low-maturity terrestrial shale with different types of kerogen: A case study of a Jurassic shale from the northern margin of Qaidam Basin, China: International Journal of Coal Geology, v. 230, 103591.

Zhao, H., N.B. Givens, and B. Curtis, 2007, Thermal maturity of the Barnett Shale determined from well-log analysis: AAPG Bulletin, v. 91, p. 535-549.

Zhao, J., Z. Jin, Z. Jin, Q. Hu, Z. Hu, W. Du, C. Yan, and Y. Geng, 2017, Mineral types and organic matters of the Ordovician-Silurian Wufeng and Longmaxi Shale in the Sichuan Basin, China: Implications for pore systems, diagenetic pathways, and reservoir quality in fine-grained sedimentary rocks: Marine and Petroleum Geology, v. 86, p. 655-674.

Zhao, J., Z. Jin, Q. Hu, K. Liu, Z. Jin, Z. Hu, H. Nie, W. Du, C. Yan, and R. Wang, 2018, Mineral composition and seal condition implicated in pore structure development of organic-rich Longmaxi shales, Sichuan Basin, China: Marine and Petroleum Geology, v. 98, p. 507-522. (graptolites)

Zhao, J., Z. Jin, Q. Hu, K. Liu, G. Liu, B. Gao, Z. Liu, Y. Zhang, and R. Wang, 2019, Geological controls on the accumulation of shale gas: A case study of the Early Cambrian shale in the Upper Yangtze area: Marine and Petroleum Geology, v. 107, p. 423-437.

Zhao, J.-Z., J. Li, W.-T. Wu, Q. Cao, Y.-B. Bai, and C. Er, 2019, The petroleum system: a new classification sheme based on reservoir qualities: Petroleum Science, v. 16, p. 229-251.

Zhao, S., Y. Li, Y. Wang, Z. Ma, and X. Huang, 2019, Quantitative study on coal and shale pore structure and surface roughness based on atomic force microscopy and image processing: Fuel, v. 244, p. 78-90.

Zhao, T., X. Li, H. Zhao, and M. Li, 2016, Molecular simulation of adsorption and thermodynamic properties on type II kerogen: Influence of maturity and moisture content: Fuel, v. 190, p. 198-207.

Zhao, T., X. Li, Z. Ning, H. Zhao, and M. Li, 2018, Molecular simulation of methane adsorption on type II kerogen with the impact of water content: Journal of Petroleum Science and Engineering, v. 161, p. 302-310.

Zhao, W., S. Zhang, K. He, H. Zeng, G. Hu, B. Zhang, Z Wang, and Y. Li, 2019, Origin of conventional and shale gas in Sinian–lower Paleozoic strata in the Sichuan Basin: Related gas generation from liquid hydrocarbon cracking: AAPG Bulletin, v. 103, p. 1265-1296.

Zhao, Y., C. Wang, Y. Zhang, and Q. Liu, 2019, Experimental study of adsorption effects on shale permeability: Natural Resources Research, v. 28, no. 4, p. 1575-1586.

Zheng, D., X. Pang, X. Ma, C. Li, Y. Zheng, and L. Zhou, 2019, Hydrocarbon generation and expulsion characeristics of the source rocks in the third member of the Upper Triassic Xujiahe Formation and its effect on conventional and unconventional hydrocarbon resource potential in the Sichuan Basin: Marine and Petroleum Geology, v. 109, p. 175-192.

Zheng, J., Y. Ju, H.-H. Liu, L. Zheng, and M. Wang, 2016, Numerical prediction of the decline of the shale gas production rate with considering the geomechanical effects based on the two-part Hooke’s model: Fuel, v. 185, p. 362-369.

Zheng, M., 2011, Rock-based characterization of the Lower Silurian Longmaxi gas-shale in the southwest Sichuan Basin, China: Norman, University of Oklahoma, unpublished M.S. thesis, 126 p.

Zheng, X., B. Zhang, H. Sanei, H. Bao, Z. Meng, C. Wang, and K. Li, 2019, Pore structure characteristics and its effect on shale gas adsorption and desorption behavior: Marine and Petroleum Geology, v. 100, p. 165-178.

Zheng, Y., Y. Liao, Y. Wang, Y. Xiog, and P. Peng, 2018, Organic geochemical characteristics, mineralogy, petrophysical properties, and shale gas prospects of the Wufeng-Longmaxi shales in Sanquan Town of the Nanchuan District, Chongqing: AAPG Bulletin, v. 102, p. 2239-2265.

Zhi, S., and D. Elsworth, 2020, Proppant embedment in coal and shale: Impacts of stress hardening and sorption: International Journal of Coal Geology, v. 227, 103545.

Zhong, M., R.F. Lafollette, J. Schuetter, and S. Mishra, 2015, Do data mining methods work? A Wolfcamp shale case study: World Oil, v. 236, no. 6, p. 45-57.

Zhou, B., 2018, The applications of NMR Relaxometry, NMR Cryoporometry, and FFC NMR to nanoporous structures and dynamics in shale at low magnetic fields: Energy & Fuels, v. 32, p. 8897-8904.

Zhou, J., Z. Jin, and K.H. Luo, 2019, Effects of moisture contents on shale gas recovery and CO2 sequestration: Langmuir, v. 35, p. 8716-8725.

Zhou, Q., X. Xiao, H. Tian, and L. Pan, 2014, Modeling free gas content of the Lower Paleozoic shales in the Weiyuan area of the Sichuan Basin, China: Marine and Petroleum Geology, v. 56, p. 87-96.

Zhou, S., D. Zhang, H. Wang, and X. Li, 2019, A modified BET equation to investigate supercritical methane adsorption mechanisms in shale: Marine and Petroleum Geology, v. 105, p. 284-292.

Zhou, S., D. Yan, J. Tang, and Z. Pan, 2020, Abrupt change of pore system in lacustrine shales at oil- and gas-maturity during catagenesis: International Journal of Coal Geology, v. 228, 103557.

Zhu, G., F. Chen, M. Wang, Z. Zhang, R. Ren, and L. Wu, 2018, Discovery of the lower Cambrian high-quality source rocks and deep oil and gas exploration potential in the Tarim Basin, China: AAPG Bulletin, v. 102, p. 2123-2151.

Zhu, H., Y. Ju, Y. Qi, C. Huang, and L. Zhang, 2018, Impact of tectonism on pore type and pore structure evolution in organic-rich shale: Implications for gas storage and migration pathways in naturally deformed rocks: Fuel, v. 228, p. 272-289.

Zhu, H., Y. Ju, C. Huang, Y. Qi, L. Ju, K. Yu, W. Li, H. Feng, and P. Qiao, 2019, Petrophysical properties of the major marine shales in the Upper Yangtze Block, south China: A function of structural deformation: Marine and Petroleum Geology, v. 110, p. 768-786.

Zhu, H., Y. Ju, C. Huang, K. Han, Y. Qi, M. Shi, K. Yu, H. Feng, W. Li, L. Ju, and J. Qian, 2019, Pore structure variations across structural deformation of Silurian Longmaxi Shale: An example from the Chuandong Thrust-Fold Belt: Fuel, v. 241, p. 914-932.

Zhu, L., C. Zhang, Z. Zhang, X. Zhou, and W. Liu, 2019, An improved method for evaluating the TOC content of a shale formation using the dual-difference ΔlogR method: Marine and Petroleum Geology, v. 102, p. 800-816.

Zhu, P., Z. Zhu, Y. Zhang, L. Sun, Y. Dong, Z. Li, and M. Xhen, 2019, Quantitative evaluation of low-permeability gas reservoirs based on an improved fuzzy-gray method: Arabian Journal of Geosciences, v. 12.

Zhu, W., W. Tian, Y. Gao, J. Deng, X. Zhang, Q. Qi, and Q. Ma, 2016, Study on experimental conditions of marine shale gas seepage law: Journal of Natural Gas Geoscience, v. 1, p. 157-163.

Zhu, X., J. Cai, X. Xu, and Z. Xie, 2013, Discussion on the method for determining BET specific surface area in argillaceous source rocks: Marine and Petroleum Geology, v. 48, p. 124-129.

Zhu, X., J. Cai, W. Liu, and X. Lu, 2016, Occurrence of stable and mobile organic matter in the clay-sized fraction of shale: Significance for petroleum geology and carbon cycle: International Journal of Coal Geology, v. 160-161, p. 1-10.

Zhu, X., J. Cai, Q. Liu, Z. Li, and X. Zhang, 2019, Thresholds of petroleum content and pore diameter for petroleum mobility in shale: AAPG Bulletin, v. 103, p. 605-617.

Zhu, Y., E. Liu, A. Martinez, M.A. Payne, and C.E. Harris, 2011, Understanding geophysical responses of shale-gas plays: Society of Exploration Geophysicists, The Leading Edge, v. 30, no. 3, p. 332-338.

Zipp, J. and G. Roberts, 2017, Quantitative analysis shows natural gas projects’ benefits outweigh costs: Oil & Gas Journal, v. 115.12, p. 71-76. (shale gas costs, benefits)

Zoback, M.D., and A.H. Kohli, 2019, Unconventional reservoir geomechanics: shale gas, tight oil, and induced seismicity: Cambridge University Press, 484 p.

Zolfaghari, A., H. Dehghanpour, M. Noel, and D. Bearinger, 2016, Laboratory and field analysis of flowback water from gas shales: Journal of Unconventional Oil and Gas Resources, v. 14, p. 113-127.

Zolfaghari, A., H. Dehghanpour, and J. Holyk, 2017, Water sorption behaviour of gas shales: I. Role of clays: International Journal of Coal Geology, v. 179, p. 130-138.

Zolfaghari, A., H. Dehghanpour, and J. Holyk, 2017, Water sorption behaviour of gas shales: II. Pore size distribution: International Journal of Coal Geology, v. 179, p. 187-195.

Zou, C., D. Dong, S. Wang, J. Li, X. Li, and K. Cheng, 2010, Geological characteristics and resource potential of shale gas in China: Petroleum Exploration Development, v. 37, p. 641-653.

Zou, C., D. Dong, S. Wang, X. Li, Y. Wang, J. Li, D. Li, S. Liao, G. Chen, and L. Huang, 2013, Shale gas, chapter 5 in Unconventional petroleum geology: New York, Elsevier, p. 149-190.

Zou, C., Z. Yang, J. Dai, D. Dong, B. Zhang, Y. Wang, S. Deng, J. Huang, K. Liu, C. Yang, G. Wei, and S. Pan, 2015, The characteristics and significance of conventional and unconventional Sinian–Silurian gas systems in the Sichuan Basin, central China: Marine and Petroleum Geology, v. 64, p. 386-402.

Zou, C., Q. Zhao, D. Dong, Z. yang, Z. Qiu, F. Liang, N. Wang, Y. Huang, A. Duan, Q. Zhang, and Z. Hu, 2017, Geological characteristics, main challenges and future prospect of shale gas: Journal of Natural Gas Geoscience, v. 2, p. 273-288.

Zou, C., and others, 2017, Unconventional petroleum geology, second edition: Elsevier, 481 p.

Zou, C., and others, 2017, Shale oil and gas, in Unconventional petroleum geology, second edition: Elsevier, p. 275-321.

Zou, J., R. Rezaee, Q. Xie, L. You, K. Liu, and A. Saeedi, 2018, Investigation of moisture effect on methane adsorption capacity of shale samples: Fuel, v. 232, p. 323-332.

Zuber, M.D., J.H. Frantz, Jr., C.W. Hopkins, J.M. Gatens, III, G.W. Voneiff, and J.E. Jochen, 1997, Advancing the understanding of Antrim Shale reservoir engineering methods. Volume I: technical report: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0292.1, 121 p.

Zuber, M.D., J.H. Frantz, Jr., C.W. Hopkins, J.M. Gatens, III, G.W. Voneiff, and J.E. Jochen, 1997, Advancing the understanding of Antrim Shale reservoir engineering methods. Volume 2: data volume: Des Plaines, Illinois, Gas Technology Institute, GRI-95/0292.2, 389 p.

Zuber, M.D., J.R. Williamson, D.G. Hill, W.K. Sawyer, and J.H. Frantz, 2003, A comprehensive reservoir evaluation of a shale reservoir—the New Albany Shale: Society of Petroleum Engineers, SPE 77469, 12 p.

Zumberge, J., K. Ferworn, and S. Brown, 2012, Isotopic reversal (‘rollover’) in shale gases produced from the Mississippian Barnett and Fayetteville formations: Marine and Petroleum Geology, v. 31, p. 43-52.

Zuo, L., W. Yu, and K. Wu, 2016, A fractional decline curve analysis model for shale gas reservoirs: International Journal of Coal Geology, v. 163, p. 140-148.