References

Adams, A., & MacKenzie, I. R. (1998). Carbonate Sediments and Rocks under the Microscope: A Colour Atlas. CRC Press, 22-180.

Ambrose, R. J., Hartman, R. C., Diaz-Campos, M., Akkutlu, I. Y., & Sondergeld, C. H. (2012). Shale gas-in-place calculations part I: new pore-scale considerations. *SPE Journal*, *17*(1), 219-229.

Audibert, A., & Bieber, M. T. (1994). X-ray tomographic study of the influence of bedding plane orientation on shale swelling. Rock Mechanics in Petroleum Engineering, 29-31 August, Delft, Netherlands, SPE-28061-MS.

Banerjee, A., Pahari, S., Jha, M., Sinha, A. K., Jain, A. K., Kumar, N. & Chandra, K. (2002). The effective source rocks in the Cambay basin, India. *AAPG bulletin*, 86(3), 433-456.

Banerjee, I. (1966). Turbidites in a glacial sequence: a study from the Talchir Formation, Raniganj Coalfield, India. *The Journal of Geology*, 593-606.

Banerjee, S., Dutta, S., Paikaray, S., & Mann, U. (2006). Stratigraphy, sedimentology and bulk organic geochemistry of black shales from the Proterozoic Vindhyan Supergroup (central India). *Journal of earth system science*, *115*(1), 37-47.

Barker, C. (1974). Pyrolysis techniques for source-rock evaluation. *AAPG Bulletin*, *58*(11), 2349-2361.

Berner, R. A. (1974). Kinetic models for the early diagenesis of nitrogen, sulfur, phosphorus, and silicon in anoxic marine sediments. *The sea*, *5*, 427-450.

Berner, R. A. (1981). A new geochemical classification of sedimentary environments. Journal of *Sedimentary Research*, 51(2) 359-365.

Biswas, S. K. (1999). A review on the evolution of rift basins in India during Gondwana with special reference to western Indian basins and their hydrocarbon prospects. *Proceedings-Indian National Science Academy Part A*, *65*(3), 261-284.

Blatt, H. (1970). Determination of mean sediment thicknesses in the crust: a sedimentologic method. *Bulletin Geol Society of America*, 81,255-262.

Boggs, S. (1987). Principles of sedimentology and stratigraphy. New Jersey: Prentice Hall, 100-170.

Boruah, A. (2014). Unconventional Shale Gas Prospects in Indian Sedimentary Basins. *Int. Journal of Scientific Research* 3.6, 35-38.

Boruah, A., & Ganapathi, S. (2015). Application of Micro Computer Tomography (μ CT) in Resolving Barren Measures Shale Properties. *International Journal of Scientific and Engineering Research*, 6(4) 1839-1843.

Boruah, A., & Ganapathi, S. (2015). Organic Richness and Gas Generation Potential of Permian Barren Measures from Raniganj Field, West Bengal, India. *Journal of Earth Syst. Sci*, 124 (5) 1063-1074

Bowker, K. A. (2007). Barnett Shale gas production, Fort Worth Basin: issues and discussion. *AAPG bulletin*, *91*(4), 523-533.

Bowker, K. A., (2003). Recent development of the Barnett Shale play, Fort Worth Basin. *West Texas Geological Society Bulletin*, 42(6),1–11.

Boyer, C., Kieschnick, J., Suarez-Rivera, R., Lewis, R. E., & Waters, G. (2006). Producing gas from its source. *Oilfield Review*, *18*(3), 36-49.

Brunauer, S., Emmett, P. H., & Teller, E. (1938). Adsorption of gases in multimolecular layers. *Journal of the American Chemical Society*, *60*(2), 309-319.

Bustin, A. M., Bustin, R. M., & Cui, X. (2008). Importance of fabric on the production of gas shales. In *SPE Unconventional Reservoirs Conference*. Society of Petroleum Engineers.

Bustin, R. M., Bustin, A. M., Cui, A., Ross, D., & Pathi, V. M. (2008). Impact of shale properties on pore structure and storage characteristics. In *SPE shale gas production conference*. Society of Petroleum Engineers, .

Casshyap, S. M., & Tewari, R. C. (1987). Depositional model and tectonic evolution of Gondwana basins. *Palaeobotanist*, *36*, 59-66.

Chakraborty, C., Ghosh, S. K., Chakraborty, T. (2003). Depositional record of tidal-flat sedimentation in the Permian Coal Measures of Central India, Barakar Formation, Mohpani Coalfield, Satpura Gondwana Basin; *Gondwana Research* 6 (4) 817–827.

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

Chalmers, G. R., Bustin, R. M., & Power, I. M. (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*, *96*(6), 1099-1119.

Chandra (1966). Collection and Study of Palynological Samples from Lower Gondwanas of Raniganj Coalfields. *GSI report*,1-16.

Chou, M. I. M., & Dickerson, D. R. (1985). Organic geochemical characterization of the New Albany Shale group in the Illinois Basin. *Organic geochemistry*, *8*(6), 413-420.

Chowdhary, L. R. (2004). Petroleum Geology of the Cambay Basin, Gujarat., India. Indian Petroleum Publishers, 55-87.

Claypool, G. E. (1998). Kerogen conversion in fractured shale petroleum systems. *AAPG Bulletin*, *82*(13), 5.

CMPDIL, (1993). Coal Atlas of India, first ed. *Central Mine Planning and Design Institute Ltd* 88-89

Cotter, G. D. P. (1917). A revised classification of the Gondwana system. *Rec. Geol. Surv. India*, *48*(1), 23-33.

Curtis, J. B. (2002). Fractured shale-gas systems. *AAPG bulletin*, *86*(11), 1921-1938.

Das, P, Kumar, S. (2012). Report On The Seismogenesis In Parts Of Bankura-Burdwan Districts, West Bengal in The Context of Neotectonic Activity in the Area, Keeping

in View The Recent Seismic Activity In The Area. Code No. SEI/ER/HQ/2012/004, 1-27.

Das, R. N. (1992). Final Report on regional exploration for coal in Chalbalpur-Mahismura Sector, Raniganj Coalfield, Barddhaman District, West Bengal. Geological Survey of India progress report Field Seasons 1985-86 to 1989-90 (78) 48

Dasgupta, P. (2005). Facies pattern of the middle Permian Barren Measures Formation, Jharia basin, India: The sedimentary response to basin tectonics. *Journal of earth system science*, *114*(3), 287-302.

Datta R. K., Sen, C R, (1986). Report on Sub-Surface Exploration for Coal In Begunia-Kulti-Chalbalpur Area, Raniganj Coalfield, Burdwan District, West Bengal.

Datta R. K., Sen, C R, Chaudhary. (1985). Annual Progress Report On Regional Exploration for Coal In Chalbalpur Nahismura Sector, Raniganj Coalfield District Burdwan, West Bengal. GSI report, 1-11.

Davies, D. K., Bryant, W. R., Vessell, R. K., & Burkett, P. J. (1991). Porosities, permeabilities, and microfabrics of Devonian shales. Springer New York, 109-119.

Demaison, G. J., & Moore, G. T. (1980). Anoxic environments and oil source bed genesis. *AAPG Bulletin*, *64*(8), 1179-1209.

Dembicki Jr, H. (2009). Three common source rock evaluation errors made by geologists during prospect or play appraisals. *AAPG bulletin*, *93*(3), 341-356.

Dutta, P. (2002). Gondwana lithostratigraphy of peninsular India. *Gondwana Research*, *5*(2), 540-553

EIA/ARI (2013). Shale Gas and Shale Oil Resource Assessment Methodology. *EIA/ARI World Shale Gas and Shale Oil Resource Assessment, June 2013.*

Espitalie, J. (1986). Use of Tmax as a maturation index for different types of organic matter, 5 Comparison with vitrinite reflectance. Thermal modelling in sedimentary basins; *Burrus, J. Editions Technip*, Paris, 475-496.

Farhaduzzaman, M., Abdullah, W. H., Islam, M., & Pearson, M. J. (2012). Source Rock Potential of Organic-Rich Shales in the Tertiary Bhuban and Boka Bil Formations, Bengal Basin, Bangladesh. *Journal of Petroleum Geology*, *35*(4), 357-375.

Feistmantel, O (1882).The fossil flora of the South Rewa Gondwana Basin. Fossil Flora of the Gondwana System. Memoirs of the Geological Survey of India, *Palaeontologia Indica*, Series 12, 4(1)1–52.

Fox, C S (1931). The Gondwana system and related Formation; *Memoirs of Geological Survey of India* 57 1–241

Frantz, J. H., Sawyer, W. K., MacDonald, R. J., Williamson, J. R., Johnston, D., & Waters, G. (2005). Evaluating Barnett Shale Production Performance-Using an Integrated Approach. In *SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers, January.

Gale, J. F., Reed, R. M., & Holder, J. (2007). Natural fractures in the Barnett Shale and their importance for hydraulic fracture treatments. *AAPG bulletin*, *91*(4), 603-622.

Ghori, K.A.K., (2002). Modeling the hydrocarbon generative history of the Officer Basin, Western Australia, *PESA Journal*, 29, 29-42.

Ghosh, S. C. (2002). The Raniganj coal basin: an example of an Indian Gondwana rift. *Sedimentary Geology*, *147*(1), 155-176.

Ghosh, S.C., Singh, G. (1977). The Barakar Formation Stratigraphic Lexion of Indian *Gondwana. Geological Survey of India*, 20 Miscellaneous Publication 16–18.

Golab, A., Ward, C. R., Permana, A., Lennox, P., & Botha, P. (2013). High-resolution three-dimensional imaging of coal using microfocus X-ray computed tomography, with special reference to modes of mineral occurrence. *International journal of coal geology*, *113*, 97-108.

Gregg, S. J. and Sing, K. S. W., (1982). Adsorption, surface area and porosity (second edition), Academic press, 1-303.

Greensmith, J. T. (2012). Petrology of the Sedimentary Rocks, 7th edition;*springer science and business media*, London 165-180.

Grim, R. E. (1951). The depositional environment of red and green shales. *Journal of Sedimentary Research*, *21*(4).

GSI (2003), Coal resources of West Bengal; *Bulletin Geological Survey of India Series A* 451-109

Guoping. Li, Elizabeth Diaz, (2010). Rock physical properties computed from digital core and cutting with application to deep gas exploration and development. *SPE deep gas conference and exhibition, Manama, Bahrain*. 24-26 January, 2010.

Hedberg, H. D. (1936). Gravitational compaction of clays and shales. *American Journal of Science*, (184), 241-287.

Heller, R., Vermylen, J., & Zoback, M. (2014). Experimental investigation of matrix permeability of gas shales. *AAPG bulletin*, *98*(5), 975-995.

Hickey, J. J., & Henk, B. (2007). Lithofacies summary of the Mississippian Barnett Shale, Mitchell 2 TP Sims well, Wise County, Texas. *AAPG bulletin*, *91*(4), 437-443.

Hood, A. C. C. M., Gutjahr, C. C. M., & Heacock, R. L. (1975). Organic metamorphism and the generation of petroleum. *AAPG Bulletin*, *59*(6), 986-996

Huggett, J. M., & Shaw, H. F. (1997). Field emission scanning electron microscopy; a high-resolution technique for the study of clay minerals in sediments. *Clay Minerals*, *32*(2), 197-203.

Hunt, M. J. (1995). Petroleum geochemistry and geology. WH Freeman and Company, 45-110.

Hunter, C. D. and David, M. Y. (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*, 37, 282-299.

Jaeger, J. C., Cook, N. G., & Zimmerman, R. (2009). Fundamentals of rock mechanics. John Wiley & Sons.

James J. Hickey, (2007). Lithofacies summary of the Mississippian Barnett Shale, Mitchell 2 T.P. Sims well, Wise County, Texas. *AAPG Bulletin*, 91(4) 437-443.

Jarvie, D. M. (2004). Assessment of the Gas Potential and Yields from Shales: the Barnett Shale Model; OGS-DOE *Unconventional Energy Resources Conference*, 110, 9-10.

Jarvie, D. M., & Lundell, L. L. (1991). Hydrocarbon generation modeling of naturally and artificially matured Barnett Shale, Fort Worth Basin, Texas: Southwest Regional Geochemistry Meeting, September 8–9, 1991, The Woodlands, Texas, 1991.

Jarvie, D. M., Brenda, L. C., Floyd, H, and John, T. B. (2001). Oil and Shale Gas from the Barnett Shale, Ft. Worth Basin, Texas; AAPG National Convention, 3-6, 2001, Denver, CO, *Am. Assoc. Petrol. Geol. Bull.* 85 (13).

Jarvie, D. M., Hill, R. J., Ruble, T. E., & Pollastro, R. M. (2007). Unconventional shale-gas systems: The Mississippian Barnett Shale of north-central Texas as one model for thermogenic shale-gas assessment. *AAPG bulletin*, *91*(4), 475-499.

Josh, M., Esteban, L., Delle Piane, C., Sarout, J., Dewhurst, D. N., & Clennell, M. B. (2012). Laboratory characterisation of shale properties. *Journal of Petroleum Science and Engineering*, *88*, 107-124

Kellerman, A. M., Kothawala, D. N., Dittmar, T., & Tranvik, L. J. (2015). Persistence of dissolved organic matter in lakes related to its molecular characteristics. *Nature Geoscience*, 8, 454–457.

Killops, S. D., & Killops, V. J. (1993). Introduction to organic geochemistry. John Wiley & Sons, 24-45.

Knies, J., & Mann, U. (2002). Depositional environment and source rock potential of Miocene strata from the central Fram Strait: introduction of a new computing tool for simulating organic facies variations. *Marine and Petroleum Geology*, *19*(7), 811-828.

Kuila U., Prasad M.,Derkowski A. and McCarty D. K. (2012). Compositional Controls on Mud rock Pore-Size Distribution: An Example from Niobrara Formation. SPE 160141-PP. Presented at presentation at the SPE Annual Technical Conference and Exhibition held in San Antonio, Texas, USA, 8–10 October 2012.

Kuila, U., & Prasad, M. (2013). Specific surface area and pore-size distribution in clays and shales. *Geophysical Prospecting*, *61*(2), 341-362.

Kundu, A., Pillai, K. R., & Thanavelu, C. (1993). Elucidation of stratigraphic inter relationship of Pali-Tiki-Parsora formations of South Rewa Gondwana Basin. *Gondwana Geology Magazine, Special Vol*, 49-59

Kutty, T. S., Jain, S. L., & Chowdhury, T. R. (1987). Gondwana sequence of the northern Pranhita-Godavari Valley: its stratigraphy and vertebrate faunas,*The Paleobotanist*, 36.

Lafargue, E., Marquis, F., & Pillot, D. (1998). Rock-Eval 6 applications in hydrocarbon exploration, production, and soil contamination studies. *Oil & Gas Science and Technology*, *53*(4), 421-437

Lele, K. M. (1964). The problem of middle Gondwana in India. In *Proceedings of the 22nd International Geological Congress, New Delhi* ,181-202.

Liu, F., Ellett, K., Xiao, Y., & Rupp, J. A. (2013). Assessing the feasibility of CO_2 storage in the New Albany Shale (Devonian–Mississippian) with potential enhanced gas recovery using reservoir simulation. *International Journal of Greenhouse Gas Control*, *17*, 111-126

Loucks, R. G., Reed, R. M., Ruppel, S. C., & Hammes, U. (2012). Spectrum of pore types and networks in mudrocks and a descriptive classification for matrix-related mudrock pores. *AAPG bulletin*, *96*(6), 1071-1098.

Loucks, R. G., Reed, R. M., Ruppel, S. C., & Jarvie, D. M. (2009). Morphology, genesis, and distribution of nanometer-scale pores in siliceous mudstones of the Mississippian Barnett Shale. *Journal of sedimentary research*, *79*(12), 848-861.

Lu, X. C., Pepin, G. P., Moss, R. M., & Watson, A. T. (1992). Determination of gas storage in Devonian shales with X-ray-computed tomography. In *SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers, January.

Maheshwari, H. K. (1991). Provincialism in Gondwana floras. *Palaeobotanist* 40, 101–127.

Maky, A. B. F., & Ramadan, M. A. (2008). Nature of organic matter, thermal maturation and hydrocarbon potentiality of Khatatba Formation at east Abu-Gharadig Basin, north

western desert, Egypt. *Australian Journal of Basic and Applied Sciences*, *2*(2), 194-209.

Manger, K. C., Oliver, S. J. P., Curtis, J. B., & Scheper, R. J. (1991). Geologic influences on the location and production of Antrim shale gas Michigan Basin. In *Low Permeability Reservoirs Symposium*. Society of Petroleum Engineers, January.

Mani, D., Patil, D. J., Dayal, A. M., Kavitha, S., Hafiz, M., Hakhoo, N., & Bhat, G. M. (2014). Gas potential of Proterozoic and Phanerozoic shales from the NW Himalaya, India: Inferences from pyrolysis. *International Journal of Coal Geology*, *128*, 81-95.

Martineau, D. F. (2007). History of the Newark East field and the Barnett Shale as a gas reservoir. *AAPG bulletin*, *91*(4), 399-403.

Mastalerz, M., Schimmelmann, A., Drobniak, A., & Chen, Y. (2013). Porosity of Devonian and Mississippian New Albany Shale across a maturation gradient: Insights from organic petrology, gas adsorption, and mercury intrusion. *AAPG bulletin*, *97*(10), 1621-1643

McLaughlin, J. D., McLaughlin, R. L., & Kneller, W. A. (1987). Organic geochemistry of the kerogen and bitumen from the Ohio Shale by pyrolysis-gas chromatography. *International journal of coal geology*, *7*(1), 21-50.

McLoughlin, S. (2001). The breakup history of Gondwana and its impact on pre-Cenozoic floristic provincialism. *Australian Journal of Botany*, *49*(3), 271-300.

Meyer B.L., and Nederlof M.H. (1984). Identification of Source Rocks on Wireline Logs by Density/Resistivity and Sonic Transit/Resistivity Crossplots. *AAPG Bulletin*, 68, 121-129.

Millot, G. (1970). Geology of clays: weathering, sedimentology, geochemistry (Vol. 429). New York and Berlin: Springer-Verlag, 118-121.

Mishra, R. (2009). Cambay Shale: the Potential Barnett of India. *ONGC bulletin* 61-68.

Mohan, M. (1995). A Promise of Oil and Gas Potential. Journal of Paleontological Society of India, 40,41-45.

Mondal and Roychoudhury (2010). Shale gas prospect in Raniganj Basin. *National conference and symposium at ISM Dhanbad*. Conference proceeding.

Montgomery, S. L., Jarvie, D. M., Bowker, K. A., & Pollastro, R. M. (2005). Mississippian Barnett Shale, Fort Worth basin, north-central Texas: Gas-shale play with multi–trillion cubic foot potential. *AAPG bulletin*, *89*(2), 155-175.

Mukhopadhyay, G., Mukhopadhyay, S. K., Roychowdhury, M., & Parui, P. K. (2010). Stratigraphic correlation between different Gondwana basins of India. *Journal of the Geological Society of India*, *76*(3), 251-266.

O'brien, N. R. (1970). The Fabric of Shale—An Electron-Microscope Study. *Sedimentology*, *15*(3-4), 229-246.

ONGC (2010). Review and Analysis of the Barren Measure Shale in the North Karanpura & Raniganj Basins Recommendation for Exploration Well Locations Definition of Coring Intervals Logging and Data Acquisition. *ONGC Damodar Valley Shale Gas Pilot Project*, No. ONGC/KDMIPE/Tech/Shale Pilot/2010-1(ONGC unpublished report).

Padhy, P. K, Venkataraman, K. and Ratnam, B. (2012). Vitrinite Reflectance profiles and understanding of Stratigraphic History of Gondwana Sequence, Krishna-Godavari basin, *ONGC Bulletin*, 47(2), 84-94.

Padhy, P. K. (2013). Krishna-Godavari Continental Rift Basin: Shale Gas and Oil Play Systems.10th Biennial International Conference & Exposition, *SPG conference proceeding*, Kochi 2013

Passey. Q. R., Creaney. S., Kulla. J. B., Moretti. F. J., Stroud. J. D., (1990). Practical Model for Organic Richness from Porosity and Resistivity Logs. *AAPG Bulletin*, 74, 1777-1794

Paul Hicks Jr, J. (1996). X-ray computer-assisted tomography for laboratory core studies. *JPT, Journal of Petroleum Technology*, *48* (12), 1120.

Peters, K. E. (1986). Guidelines for evaluating petroleum source rock using programmed pyrolysis. *Am. Assoc. Petrol. Geol. Bull.* 70(3) 318-329.

Peters, K. E. and Moldowan, J. M. (1993). The biomarker guide Interpreting Molecular Fossils in Petroleum and ancient sediments, Englewood cliffs, New Jerssy; *Prentice Hall. Inc.* 55-67.

Peters, K. E., and Cassa, M. R. (1994). Applied source rock geochemistry, in LB. Magoon, and W.G. Dow, (eds.), The petroleum system; from source to trap; *AAPG Memoir* 60 93-120.

Pettijohn, F. J. (1984). Sedimentary Rocks; third edition, *Harper and Raw publisher*, USA.260-284.

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*, 91(4), 551-578.

Potter, P. E., Maynard, J. B., & Pryor, W. A. (1980). *Sedimentology of shale*. Springer, *Verlag*, New York, Heidelberg Berlin 1-260.

Pye, K., Dickson, J. A. D., Schiavon, N., Coleman, M. L., & Cox, M. (1990). Formation of siderite-Mg-calcite-iron sulphide concretions in intertidal marsh and sandflat sediments, north Norfolk, England. *Sedimentology*, *37*(2), 325-343.

Qingmin, M. (2015). Modeling and prediction of natural gas fracking pad landscapes in the Marcellus Shale region, USA. A rejoinder to Klein and Manda's commentary, *Landscape and Urban Planning*, 136, 52-53.

Randolph, A. K. and James R. H. (2003). Stratiform Barite Deposits in the Roberts Mountains Allochthon, Nevada: A Review of Potential Analogs in Modern Sea-Floor Environments. *U.S. Department of the Interior & U.S. Geological Survey report, Bulletin 2209–H.*

Rickman, R., Mullen, M. J., Petre, J. E., Grieser, W. V., & Kundert, D. (2008). A practical use of shale petrophysics for stimulation design optimization: All shale plays are not clones of the Barnett Shale. In *SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers.

Rogner, H. H. (1996). *An Assessment of World Hydrocarbon Resources. IIASA*. WP-96–26, Laxenburg, Austria.

Ross, D. J., & Bustin, R. M. (2007). Shale gas potential of the lower jurassic gordondale member, northeastern British Columbia, Canada. *Bulletin of Canadian Petroleum Geology*, *55*(1), 51-75.

Sastry, M. V. A. (Ed.). (1977). *Stratigraphic lexicon of Gondwana formations of India* (No. 36). Controller of Publications, Government of India.

Schieber, J., & Baird, G. (2001). On the origin and significance of pyrite spheres in Devonian black shales of North America. *Journal of Sedimentary Research*, *71*(1), 155-166.

Schmoker, J. W. (1979). Determination of Organic Content of Appalachian Devonian Shales from Formation-Density Logs: Geologic Notes. *AAPG Bulletin*, *63*(9), 1504-1509.

Sen, C R,, Datta R. K., (1980). Report on Sub-Surface Exploration for Coal In Begunia-Kulti-Chalbalpur Area, Raniganj Coalfield, Burdwan District, West Bengal.*GSI report*, 1-13.

Sengupta, N., Guha, P. K. S., & Mukhopadhyay, A. (1979). Pattern of lower Gondwana sedimentation, Jharia Basin, a model. In *IVth International Gondwana Symposium* Hindustan Pub. Co. Delhi, (2) 617-625.

Shah, B. J., Tewari, D. C., Mondal, S., Anand, A. K., Buddhiwant, A., & Sangwai, J. S. (2015). Estimation of uncertainty in sonic porosity using microcomputerized tomography images. *Journal of Petroleum Science and Engineering*, *125*, 100-106.

Sharma, S. K., Minaxi P. A. L., Jha, B. K., & Venkatesh, V. (1987). Source Rock Potential for Hydrocarbon Generation in Barakar Coals and Carbonaceous Shales of Damodar Basin. In *Proceedings of the National Seminar on Coal Resources of India*, Banaras Hindu University, 65-74.

Sharma, S. S., & Kulkarni, P. K. (2010). Gas Strike in Shale Reservoir in Dholka Field in Cambay Basin. In *SPE Oil and Gas India Conference and Exhibition*. Society of Petroleum Engineer, January.

Shen, W., Lin, Y., Xu, L., Li, J., Wu, Y., & Sun, Y. (2007). Pyrite framboids in the Permian–Triassic boundary section at Meishan, China: evidence for dysoxic deposition. *Palaeogeography, Palaeoclimatology, Palaeoecology*, *253*(3), 323-331.

Sing K.S.W., Everett D.H., Haul R.A.W., Moscou L., Peirotti R.A. and Rouquerol J. (1985). IUPAC commission on colloid and surface chemistry including catalysis. Pure and Applied Chemistry 57,603–619.

Slatt, R. M., & O'Brien, N. R. (2011). Pore types in the Barnett and Woodford gas shales: Contribution to understanding gas storage and migration pathways in fine-grained rocks. *AAPG bulletin*, *95*(12), 2017-2030.

Slatt, R. M., & Rodriguez, N. D. (2012). Comparative sequence stratigraphy and organic geochemistry of gas shales: Commonality or coincidence?. *Journal of Natural Gas Science and Engineering*, *8*, 68-84.

Sondergeld, C. H., & Rai, C. S. (2011). Elastic anisotropy of shales. *The Leading Edge*, *30*(3), 324-331.

Spears, D.A. (1976). The fissility of some carboniferous shales. *Sedimentology*, 23, 721-725

Stein, R. (2007). Upper Cretaceous/lower Tertiary black shales near the North Pole: Organic-carbon origin and source-rock potential. *Marine and Petroleum Geology*, *24*(2), 67-73.

Szabó, D., Pinka, J., & Stolićny, E. (2014). Stimulation of unconventional hydrocarbon reservoirs. *AGH Drilling, Oil, Gas*, *31*.

Taud, H., Martinez-Angeles, R., Parrot, J. F., & Hernandez-Escobedo, L. (2005). Porosity estimation method by X-ray computed tomography. *Journal of petroleum science and engineering*, *47*(3), 209-217

Tewari, R.C. and Casshyap, S.M. (1996) Mesozoic tectonic event including rifting in Peninsular India and their bearing on Gondwana sedimentation. *Ninth International Gondwana Symp.*, Hyderabad, Geological Survey of India.Oxford and IBH Publishing Co., New Delhi-Calcutta,. 865-880.

Thomas, R. N. (1951). Devonian shale gas production in central Appalachian area. *AAPG Bulletin*, 35, 2249-2256

Thompson, T. W., McBane, R. A., Moody, M., Sitler, G., & Strawn, J. A. (1984). Investigations into devonian shale gas production mechanisms in southern Ohio (No. CONF-8410216-). Terra Tek Inc.

Tissot, B. P. (1984). Recent advances in petroleum geochemistry applied to hydrocarbon exploration; *Am. Assoc. Petrol. Geol. Bull*. 68 (5) 545-563.

Tissot, B. P. and Welte, D. H. (1984). Petroleum Formation and occurrence: A new approach to oil and gas exploration; 2nd ed.*: Springer Verlag*, Berlin 150-169.

Ulrike, W., Grzegorz L., Maria M., and Schimmelmann A. (2005), Assessing the feasibility of CO_2 storage in the New Albany Shale (Devonian–Mississippian) with potential enhanced gas recovery using reservoir simulation. *Solid State Nuclear Magnetic Resonance*, 27, 1–2,140-148.

Van Geet, M., Swennen, R., & Wevers, M. (2000). Quantitative analysis of reservoir rocks by microfocus X-ray computerised tomography. *Sedimentary Geology*, *132*(1), 25-36.

Van Krevelen, D. W. (1961) Coal: Typology–Chemistry–Physics–Constitution; *Elsevier Science*, Amsterdam 514.

Varma, A. K., Hazra, B., & Srivastava, A. (2014). Estimation of Total Organic Carbon in shales through color manifestations. *Journal of Natural Gas Science and Engineering*, *18*, 53-57

Varma, A. K., Hazra, B., Mendhe, V. A., Chinara, I., & Dayal, A. M. (2015). Assessment of organic richness and hydrocarbon generation potential of Raniganj basin shales, West Bengal, India. *Marine and Petroleum Geology*, *59*, 480-490.

Veevers, J. J., & Tewari, R. C. (Eds.). (1995). *Gondwana master basin of peninsular India between Tethys and the interior of the Gondwanaland province of Pangea* (Vol. 187). Geological Society of America

Wang, F. P., Reed, R. M., & John, A. (2009). Pore networks and fluid flow in gas shales. *In SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers,4-7.

Wang, G., & Carr, T. R. (2012). Methodology of organic-rich shale lithofacies identification and prediction: A case study from Marcellus Shale in the Appalachian basin. *Computers & Geosciences*, *49*, 151-163.

Wang, G., & Carr, T. R. (2013). Organic-rich Marcellus Shale lithofacies modeling and distribution pattern analysis in the Appalachian Basin. *AAPG bulletin*, *97*(12), 2173-2205.

Wang, S. Y., Ayral, S., & Gryte, C. C. (1984). Computer-assisted tomography for the observation of oil displacement in porous media. *Society of Petroleum Engineers Journal*, *24*(01), 53-55

Weaver, C.E. (1989). Clays, Muds and Shales. *Developments in Sedimentology,* 44, 819.

Yao, Y., Liu, D., Che, Y., Tang, D., Tang, S., & Huang, W. (2009). Non-destructive characterization of coal samples from China using microfocus X-ray computed tomography. *International Journal of Coal Geology*, *80*(2), 113-123.

Zuber M.D. and Voneiff G.W., (1994). Characterization of Michigan Antrim Shale Reservoirs Based on Analysis of Field-Level Data, *SPE Eastern Regional Meeting,* 8-10 November, Charleston, West Virginia Publication, SPE-29169-MS

Zuber, M.D., Voneiff, G. W., Frantz Jr, J. H., & Gatens III, J. M., (1994). Reservoir Characterization and Production Forecasting for Antrim Shale Wells: An Integrated Reservoir Analysis Methodology. MS28606, *SPE Conference Paper*

$$$$$$$$$$$$$$$$$$$$$$