

Xun Sun

Professional Summary

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Business address: The University of Texas at Austin
Bureau of Economic Geology
10100 Burnet Rd., Bldg. 130
Austin, TX 78758
Telephone: (512) 471-4331
E-mail address: xun.sun@beg.utexas.edu

Professional Preparation

Academic Background

Ph.D., School of Energy Resource, China University of Geosciences, Beijing, 2014

Areas of Expertise

Areas of Expertise

Proficient operation of GC, GCMS, GCMSMS and isotope mass spectrometer and data analysis

Awards

Awards and Honorary Societies

"Excellent Student" scholarship, Jilin University

Presentations

Invited Presentations

Chemical and Carbon Isotopic Gas Compositions from The Wolfcamp in Permian Basin and Their Geological Significance: presented to Goldschmidt Virtual 2020, presented at Unconventional Shale Reservoirs (08o), Virtual conference meeting, June 21-26, 2020.

Presentations

Comparative studies of gas geochemistry and oil migration in 3rd Bone Spring and Wolfcamp A, Delaware Basin: presented to MSRL consortium members, presented at MSRL Annual Meeting, Houston, Tex., April 11-12, 2022.

Mobile oil estimate with integrated method of geochemistry and N₂ adsorption in mudrocks of 3rd Bone Spring Sand and Wolfcamp X, Delaware Basin: presented to MSRL consortium members, presented at MSRL Annual Meeting, Houston, Tex., April 11-12, 2022.

Possible Sources and Migration Pathway (Petroleum System) of the Pennsylvanian (Desmoinesian) Strawn Group: presented to Carr Resources, presented at STARR internal meeting, Austin, Tex., March 24, 2022.

Organic geochemical characterization of Upper Wolfcamp and 3rd Bone Spring Formation, Delaware Basin: presented to AAPG, presented at International Meeting for Applied Geoscience & Energy (IMAGE), oral presentation, September 27-29, 2021.

Chemical and Carbon Isotopic Gas Compositions from The Wolfcamp in Midland Basin and Their Significance as Geochemical Tracers for Well Completion: presented to AEC 2020, presented at Theme 5: Permian Basin Unconventional Plays In Memory of Stephen C. Ruppel II, online Zoom meeting, September 29-October 1, 2020.

Pore Size Distributions and Oil Storage Mechanism in The Wolfcamp Mudstone, Midland Basin:

presented to AEC 2020, presented at Theme 5: Permian Basin Unconventional Plays In Memory of Stephen C. Ruppel II, online Zoom meeting, September 29-October 1, 2020.

Publications

Peer Reviewed Journal Articles

Li, X., Sun, X., Walters, C. C., and Zhang, T., 2024, H₂, CH₄ and CO₂ adsorption on Cameo coal: insights into the role of cushion gas in hydrogen geological storage: *International Journal of Hydrogen Energy*, v. 50, part D, p. 879-892, <http://doi.org/10.1016/j.ijhydene.2023.08.185>.

Walters, C. C., Zhang, T., Sun, X., and Li, X., 2024, Geochemistry of oils and condensates from the lower Eagle Ford formation, south Texas. Part 6: carbon isotopes: *Marine and Petroleum Geology*, v. 167, no. 106932, 21 p., <http://doi.org/10.1016/j.marpetgeo.2024.106932>.

Sun, X., Walters, C. C., and Zhang, T., 2023, Geochemistry of oils and condensates from the lower Eagle Ford Formation, south Texas. Part 5: Light hydrocarbons: *Marine and Petroleum Geology*, v. 157, no. 106500, 19 p., <http://doi.org/10.1016/j.marpetgeo.2023.106500>.

Walters, C. C., Gong, C., Sun, X., and Zhang, T., 2023, Geochemistry of oils and condensates from the lower Eagle Ford formation, South Texas. Part 3: basin modeling: *Marine and Petroleum Geology*, v. 150, no. 106117, 21 p., <http://doi.org/10.1016/j.marpetgeo.2023.106117>.

Walters, C. C., Sun, X., and Zhang, T., 2023, Geochemistry of oils and condensates from the lower Eagle Ford formation, south Texas. Part 4: Diamondoids: *Marine and Petroleum Geology*, v. 154, no. 106308, 22 p., <http://doi.org/10.1016/j.marpetgeo.2023.106308>.

Sun, X., Zhang, T., and Walters, C. C., 2022, Geochemistry of oils and condensates from the lower Eagle Ford Formation, south Texas. Part 2: Molecular characterization: *Marine and Petroleum Geology*, v. 141, no. 105710, 23 p., <http://doi.org/10.1016/j.marpetgeo.2022.105710>.

Zhang, T., Sun, X., Walters, C. C., Sundaram, A., and Calla, T. J., 2022, Geochemistry of oils and condensates from the lower Eagle Ford formation, south Texas. Part 1: Crude assay measurements and SimDist modeling: *Marine and Petroleum Geology*, v. 139, no. 105576, 16 p., <http://doi.org/10.1016/j.marpetgeo.2022.105576>.

Zhang, T., Fu, Q., Sun, X., Hackley, P. C., Ko, L. T., and Shao, D., 2021, Meter-scale lithofacies cycle and controls on variations in oil saturation, Wolfcamp A, Delaware and Midland Basins: *AAPG Bulletin*, v. 105, no. 9, p. 1821-1846, <http://doi.org/10.1306/01152120065>.

Enriquez, D. A., Zhang, T., Sun, X., Meng, D., and Zhang, Y., 2020, Methane resaturation in Barnett Formation core plugs and new approach for determination of post-coring gas loss: *Marine and Petroleum Geology*, v. 118, no. 104430, 15 p., <http://doi.org/10.1016/j.marpetgeo.2020.104430>.

Tang, X., Zhang, T., Zhang, J., Sun, X., Wu, C., and Jin, Z., 2020, Effect of pore fluids on methane sorption in the Lower Bakken Shales, Williston Basin, USA: *Fuel*, v. 282, no. 118457, 14 p., <http://doi.org/10.1016/j.fuel.2020.118457>.

Reed, R. M., Sivil, J. E., Sun, X., and Ruppel, S. C., 2019, Heterogeneity of microscale lithology and pore systems in an Upper Cretaceous Eagle Ford Group horizontal core, South Texas, U.S.A.: *GCAGS Journal*, v. 8, p. 22-34.

Ko, L., Loucks, R. G., Milliken, K., Liang, Q., Zhang, T., Sun, X., Hackley, P. C., Ruppel, S. C., and Peng, S., 2017, Controls on pore types and pore-size distribution in the Upper Triassic Yanchang Formation, Ordos Basin, China: implications for pore-evolution models of lacustrine mudrocks: *Interpretation*, v. 5, no. 2, p. SF127-SF148, <http://doi.org/10.1190/INT-2016-0115.1>.

Sun, X., Liang, Q., Jiang, C., Enriquez, D., Zhang, T., and Hackley, P., 2017, Liquid hydrocarbon characterization of the lacustrine Yanchang Formation, Ordos Basin, China: organic-matter source variation and thermal maturity: *Interpretation*, v. 5, no. 2, p. SF225-SF242, <http://doi.org/10.1190/INT-2016-0114.1>.

Zhang, T., Sun, X., Milliken, K., Ruppel, S. C., and Enriquez, D., 2017, Empirical relationship between gas composition and thermal maturity in Eagle Ford Shale, south Texas: AAPG Bulletin, v. 101, no. 8, p. 1277-1307, <http://doi.org/10.1306/09221615209>.

Zhang, T., Wang, X., Zhang, J., Sun, X., Milliken, K., Ruppel, S. C., and Enriquez, D., 2017, Geochemical evidence for oil and gas expulsion in Triassic lacustrine organic-rich mudstone, Ordos Basin, China: Interpretation, v. 5, no. 2, p. SF41-SF61, <http://doi.org/10.1190/INT-2016-0104.1>.

Sun, X., Zhang, T., Sun, Y., Milliken, K., and Sun, D., 2016, Geochemical evidence of organic matter source input and depositional environments in the lower and upper Eagle Ford Formation, south Texas: Organic Geochemistry, v. 98, p. 66-81, <http://doi.org/10.1016/j.orggeochem.2016.05.018>.

Zhang, T., Yang, R., Milliken, K., Ruppel, S. C., Pottorf, R. J., and Sun, X., 2014, Chemical and isotopic composition of gases released by crush methods from organic rich mudrocks: Organic Geochemistry, v. 73, p. 16-28, <http://doi.org/http://dx.doi.org/10.1016/j.orggeochem.2014.05.003>.

Non Peer Reviewed Journal Articles

Sun, X., 2012, Acidolysis hydrocarbon characteristics and significance of sediment samples from the ODP drilling legs of gas hydrate: Geoscience Frontiers, v. 3, no. 4, p. 515-521.

Contract Reports

Zhang, T., Sun, X., and Walter, C. C., 2020, Spatial heterogeneity of Austin Chalk crude and key controls on crude properties: final report, under contract no. UTA18-000529/ EM10480.TO25, 93 p.

Published Reports

Moscardelli, L., Ambrose, W. A., Young, M. H., Scanlon, B. R., Flaig, P. P., Olariu, M. I., Hattori, K., Ko, L., Loucks, R. G., Radjef, E., Maraggi, L., Schuba, N., Sivil, J. E., Peng, S., Zhang, T., Sun, X., Zeng, H., Ogiesoba, O. C., Fu, Q., Reed, R. M., Rogers, H., Duncan, I. J., Dommissie, R., Jensen, J., Hessler, A., DeJarnett, B. B., and Periwai, P., 2023, State of Texas Advanced Resource Recovery (STARR) 2020-2022 biennium report: The University of Texas at Austin, Bureau of Economic Geology 51 p.

Workshop Workbooks

Ambrose, W. A., Loucks, R. G., Ogiesoba, O. C., Radjef, E., Reed, R. M., Sun, X., Zeng, H., Zhang, T., and Moscardelli, L., 2023, Cretaceous Volcanic Reservoirs of Texas: STARR.

Published Abstracts

Reed, R. M., Ruppel, S. C., Sun, X., Sivil, J. E., and Rowe, H. D., 2018, Lateral heterogeneity of microscale lithology and pore development in an Upper Cretaceous Eagle Ford Group horizontal core (abs.): AAPG Datapages/Search and Discovery Article, no. 90323, 1 p.

Sun, X., Zhang, Tongwei, Milliken, K., 2014, Geochemical characterization of organic matter from the Eagle Ford Formation and indication of thermal maturity and depositional redox conditions (abs.): American Association of Petroleum Geologists Annual Convention and Exhibition, Houston, Texas, April 6-9, abstracts, CD-ROM.

Sun, X., Zhang, Tongwei, Milliken, K., 2014, Geochemical evidence of organic matter sources and depositional environments, Lower and Upper Eagle Ford Formation (ext. abs.): 2014 Meeting of Mudrock Systems Research Laboratory, March 5-6, 2014, no. 231-242.

Zhang, Tongwei, Sun, X., Milliken, K., 2014, Oil and gas generation and pore evolution of artificially-matured Eagle Ford shale by non-hydrous gold-tube pyrolysis (ext. abs.): 2014 Meeting of Mudrock Systems Research Laboratory, March 5-6, 2014, no. 231-242.

Zhang, Tongwei, Sun, X., Milliken, K., 2014, Pore characterization of Eagle Ford shales by N₂ adsorption and desorption isotherms and pore evaluation in organic matter during thermal maturation (abs.): AAPG Annual Convention and Exhibition, Houston, Texas, April 6-9, abstracts, CD-ROM.

Sun, X., Zhang, Tongwei, 2013, Liquid hydrocarbon extraction, separation and quantification for organic-rich rocks and studies on thermal maturity and depositional environments (ext. abs.): 2013 Meeting of Mudrock Systems Research Laboratory, March 5-6, 2013, no. 239-247.